BLENDED LEARNING: AN INTERPRETIVE ACTION RESEARCH STUDY

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Declaration

This thesis contains material which the author has used before in the following publications:

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Heinze, A. and C. Procter (2005). Communication - a challenge and an enabler for facilitating Blended learning community. Socio-cultural Theory in Educational Research and Practice, Manchester, University of Manchester.

Heinze, A., C. Procter, and B. Scott (2005). The Theory and Practice of the Conversational Framework: Proposed Amendments and Enrichments. Third Education in a Changing Environment Conference, University of Salford, University of Salford.

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Abbreviations

The following abbreviations are used in this thesis.

C1, C2, C3 and C4 – represent the action research cycle number, i.e. C1 is ‘cycle 1’.

CoP – Community of Practice

f2f – face-to-face

GTA – Graduate Teaching Assistant

HEI – Higher Education Institution

ICT – Information Communication Technology

MBO – Management Business Operations

SAD – Systems Analysis and Design

PBIS – Programming Business Information Systems

VB – Visual Basic

VP1 - Visual Programming 1

VLE – Virtual Learning Environment

ZPD – Zone of Proximal Development

Definitions

The following terms have specific meaning in this thesis.

Blended learning: is a concept that is developed in this thesis. The definition based on the literature is as follows: *Blended learning is the delivery of teaching/learning through the combination of online and face-to-face interaction resulting in improved student learning.* The final definition arrived at by the end of this thesis is as follows: ***Blended e-learning refers to the learning which takes place through a combination of face-to-face facilitated learning, e-learning and self-study.***

Communities of Practice: "*a group of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis."* (Wenger, McDermott et al. 2002:4).

Constructivist teaching: *based on the assumption that learning is a process whereby a student is actively engaging with constructing their knowledge. The role of the teacher is as a facilitator of that learning.* This is contrasted with the didactic teaching process, where the emphasis is on the teacher's activity and not the learner's.

Didactic teaching: *a process whereby knowledge is considered to be 'imposed' on the learner. This places a great emphasis on the teacher and how he/she constructs the teaching process. The role of the teacher is that of the 'sage on the stage'.* Didactic teaching is used as an example to illustrate the opposite of constructivist teaching.

Distance Learning: *is learning that takes place remotely, this means that the learner is not engaged in face-to-face communication but unlike in online learning, can utilise conventional means of communication such as books, letters, and post.*

E-learning: *learning that is facilitated by any electronic means. This is a very broad term that encompasses every use of electronic communication technology for example e-mail, which leads to the facilitation of the learning process.*

Face-to-face: *communication that takes place between individuals in an environment where they are physically present and are able to see each other and hence benefit from body language and other non-verbal communication clues.*

Learning: *is a process of development which results in the acquisition of meaning. This can be new theoretical concepts or practical skills.*

Node: *a conceptual representation of codes that the author found significant during the analysis process using QSR NVivo software.* Nodes are represented in diagrams and graphically illustrated with a ball.

Node tree: *logical composition of nodes into a tree hierarchy. Tree node diagrams used in this study are organised so that the root of the tree is at the top. Each node is uniquely identifiable within a tree by an automatically assigned number in QSR NVivo software.* For example node number (3 7 10 14) signifies that this particular node is located within the third tree, seventh branch, tenth twig and fourteenth leaf.

Online Learning: *learning that takes place solely in an Internet connected environment. For example learning from online discussion groups is online learning because the participation in these requires learners to be connected to the Internet to access the discussion board.*

Pedagogy: *general term used to justify a planned process of teaching which is based on specific assumptions about student learning.*

Virtual Learning Environment (VLE): *is a learning management software system that enables learner access to a number of learning tools. In the case of this thesis it is the Blackboard (www.Blackboard.com) VLE which is used by students to engage in their university related learning activities.*

Zone of Proximal Development (ZPD): "*the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers."* (Vygotsky 1935:86)

Abstract

This study describes research on an undergraduate part-time blended learning programme within the former Information Systems Institute at the University of Salford. This research is based on the interpretive philosophical paradigm and examines four cycles of action research. The question being addressed in this research is: 'How can blended learning be used to deliver a programme?' In answering this question three overlapping perspectives were taken, as outlined below:

1) Concept of blended e-learning: This research suggests that a better term for 'blended learning' is 'blended e-learning'. A Fine Structure of the Blended E-learning Concept comprising *learning* and *learning context* is proposed. This concept incorporates three nodes associated with *learning*: face-to-face facilitated learning, e-facilitated learning and self-study; and three nodes associated with the *learning context*: learner, pedagogic beliefs and the programme related issues.

2) Pedagogy in blended e-learning: This thesis identifies the three Key Issues of Blended E-learning Pedagogy, these are: communication, social interaction and assessment. Drawing on these issues, the thesis extends the Skeleton of Conversation to the Blended E-learning Skeleton of Conversation.

3) Pragmatic implications of blended e-learning: Building on the Fine Structure of the Blended E-learning Concept, three areas of pragmatic concern are identified as the Bermuda Triangle of Blended E-learning. These are the *learning* related nodes: *face-to-face facilitated learning*, *e-facilitated learning* and *self-study*. Both students and staff on blended e-learning programmes need to be aware of the Bermuda Triangle of Blended E-learning. For students, the awareness can be integrated in the *learning to learn* element within the Blended E-learning Skeleton of Conversation; for staff, the awareness can be achieved through staff development.

Chapter 1 Introduction to the problem area

1.1 Introduction

This thesis is concerned with the introduction of a blended learning approach to the delivery of a part-time programme. This programme leads to the award of a BSc in Information Technology at the University of Salford. The particular concerns of the work were the rationale for the introduction of blended learning, the design and implementation of the programme, and the subsequent staff and student responses.

This Chapter argues that this research is justified by the need for a better understanding of both the practice of blended learning and its pedagogical foundations and by the current lack of a generally applicable conceptual framework for blended learning. The Chapter is structured in the following manner. Firstly, the research problem area of blended learning is identified and contextualised by related developments in the field of technology, educational policy and learning technologies. Secondly, the scope of the study is introduced by outlining the main areas of the research: practical implications of the use of blended learning, pedagogy for blended learning, and the blended learning concept. These three areas of interest are translated into research questions, which provide the focus for the work. Thirdly, it outlines the organisation of the work, and the research plan, which is based on the research questions and the conceptual framework adopted for this thesis. Finally, the structure of the thesis will be presented using Chapter headings and their summaries.

1.2 Research problem overview

In order to contextualise this study a brief outline of developments in the area of e-learning is provided. This draws firstly on the technological advances in the area of information communication technology and how these translate to the drivers for the utilisation of technology to facilitate e-learning. Some of the main discussions are highlighted by identifying weaknesses in the adoption of e-learning and suggest that blended learning is a better way to address the utilisation of learning technology.

1.2.1 Technological advances

Information Communication Technology (ICT), which embraces the use of computers to facilitate electronic data manipulation and communication, has had an almost explosive growth in all aspects of modern societies (Mintel 2000). Figures compiled in 2006 suggest that around 97% (PricewaterhouseCoopers 2006) of businesses in the UK have access to the Internet. A similar impact is seen on the overall population, with over half of all British adults namely 62 %, having used the Internet in the three months of the survey (Mintel 2007). Similar take-up can be observed in Higher Education, where the majority of staff have access to Internet connected computers (Cooke, Greenwood et al. 2006). Not only do all Higher Education Institutions (HEIs) provide access to personal computers (PC's) with Internet connection, but 95% have invested into the provision of a centralised Virtual Learning Environment (JISC 2005). All of this is quite remarkable considering that most of this development has taken place since the advent of the PC in the 1980's and the introduction of the World Wide Web in the 1990's (Hofmann 2005).

The use of computers in teaching and learning predates the advent of the Word Wide Web (the Internet) (Hofmann 2005), with developments such as 'computer based learning' (Kozma 1987; Merrill 1080) and 'computer assisted learning' (Barker and Yeates 1985; Kemmis, Atkin et al. 1977). However, the Internet brought into being what is sometimes called 'web based instruction' and on other occasions 'online learning'. All of these attempts to bring ICT into the world of teaching and learning are now subsumed by the over-arching term 'e-learning' (Littlejohn and Pegler 2007; Procter 2002). Virtual Learning Environments are a development in e-learning (Britain and Liber 1999). They are learning management software systems which allow students and teachers to interact in a 'closed environment' in order to facilitate learning. Their functionality has increased in the last 8 years and recently some VLEs allow integration with other institutional information systems (Cook, White et al. 2007). Examples of VLEs include Blackboard, a commercial development originating in the United States of America and Moodle, an open source development originating in Australia (Britain and Liber 2004; Cole 2005).

The significance of e-learning was recognised by many governments which in turn developed national strategies (Asgarkhani 2004). In their consultation document "Towards a Unified e-learning Strategy" in July 2003, the UK Government outlined their strategic view of e-

learning for the country and argued that there existed the potential for revolutionising learning and teaching:

> *"e-learning has the potential to revolutionise the way we teach and how we learn."* (DfES 2003:2)

Obviously higher education pays a great deal of attention to Government strategy. However, the ways in which they respond to this depends upon how they perceive their necessities for development (Lisewski 2004). Universities are not simply about e-learning. The important drivers for e-learning in HEIs, along with meeting 'student expectations', were cost cutting (Bersin and Associates 2003), quality improvement (Russell 2001) and widening participation (Asgarkhani 2004; Littlejohn and Pegler 2007). Interestingly, pedagogy, which is considered in this work as a general term referring to the way in which teaching is organised in order to facilitate students' learning, was not seen as an important driver for the introduction of ICT in HEIs (Kemmis, Atkin et al. 1977; Littlejohn and Pegler 2007).

1.2.2 Drivers for e-learning

At first sight it appears straight forward: if one can do away with lecturing staff then the cost of delivery must surely decrease and e-learning is therefore more cost effective. However, it is soon apparent that there is a high cost incurred in the development of e-learning materials (Gunasekaran, McNeil et al. 2002). Even so, since such materials can be reused, then there must come a point where the savings on staff exceed the initial investment in e-learning. However, this thinking fails to take into account the continuing support necessary in e-learning, which of course increases with the number of students. Once again there is a counterargument i.e. that if the number of students increases so does the assumed fee income. Obviously cost cutting through e-learning is not a simple matter. Two examples illustrate this point.

Commercial organisations report substantial savings (over 700% return on investment) through replacing offsite face-to-face training with e-learning (Bersin and Associates 2003; Carter and Associates 2005; Littlejohn and Pegler 2007). It is easy to see how such returns can arise. Commercial organisations have always taken the cost of staff education and training most seriously (Birchall and Woolfall 2003). They include in their costing not only the cost of delivery but also the employment costs of the staff member participating in the training, and

the travel and accommodation costs, if applicable (Barbazette 2007). The release of staff to attend an off site training event can be very expensive. If the company employs a large number of relevant staff then training costs can be almost prohibitive. For such situations the idea of on-site delivery through e-learning can be quite attractive; the economies of scale soon make themselves felt (Birchall and Woolfall 2003).

Similar economies of scale thinking were present in the establishment of the UK eUniversities Worldwide Limited (UKeU) in March 2003 (Bacsich 2005). The plan was for a group of British Universities to co-operate in order to develop and deliver

> *"online and worldwide the best degrees and degree-level learning that UK universities can provide."* (Bacsich 2005:7)

The UK Government invested £55 million in this initiative and a great deal of good work was done (Conole, Carusi et al. 2005). Nevertheless, UKeU was not able to attract sufficient student numbers to make it profitable and hence it was closed (Bacsich 2005; Conole, Carusi et al. 2005).

Obviously, there is a major difference between an enterprise commissioning an e-learning based programme of training for its many staff and educational institutions developing e-learning materials to be made available on a worldwide basis (Hallinger and Snidvongs 2005). The former is about demand; the latter is about supply. In both cases cost is a major driver. However in the case of the HEIs, it is not the cost that determines success or failure but rather the income relative to costs. Cost might be a driver in determining whether e-learning is an option for HEIs but it is income that is the determinant for success (Clark 1972; Littlejohn and Pegler 2007).

The second popular driver for e-learning is quality improvement. There are mixed messages from the research which has addressed this driver. A Joint Information Systems Committee (JISC) commissioned report in 2003 concluded that despite the main driver of HEIs being 'improving the quality of teaching and learning', the reality suggested that improvements are actually realised in the overall student experience and not in the teaching and learning per se (Social Informatics Research Unit (SIRU) and Education for Change Ltd (EfC) 2003). There is further evidence that suggests that there was no improvement in teaching quality on courses that utilised ICT (Russell 2001). Where there is evidence of improvement, this has been

shown to be dependent on context (Littlejohn and Pegler 2007; Pepicello and Pepicello 2003; Ramage 2001). Because of the very individual and contextual nature of teaching and learning, others have criticised the very activity of teaching and learning quality measurement (Ramage 2001; Shevlin, Banyard et al. 2000). Looking at teaching and learning as a whole there is evidence that the administration of such activities is improved through electronic communication management and greater transparency (Hallinger and Snidvongs 2005). This is an important finding since the main use of technology in teaching and learning is still its administration (Conole 2004).

Widening participation is the third driver for the use of e-learning. Widening participation is a term that encompasses enabling access to education by learners who would not traditionally have considered taking part in higher education (Macdonald and Stratta 2001). Examples of widening participation include part-time students who cannot attend daily classes due to work and family commitments (Procter 2003), and generally those students who are not able to engage with learning for any other reason (Asgarkhani 2004). An example of the latter would be disabled students, who can make use of assistive technologies to engage with learning (Santos 2006). It is recognised that the move to using e-learning promotes an institutional adaptation of Virtual Learning Environments, yet these are not accessible for example for some visually impaired students (Jenkins, Browne et al. 2001).

There are arguments that access to ICT alone is not able to motivate adult learners to re-engage with learning (Selwyn and Gorard 2003). There are differing opinions on this topic. However, Littlejohn and Pegler (2007) argue that in order to address the needs of part-time learners in particular, who are not able to attend face-to-face sessions regularly, e-learning provides a viable solution.

1.2.3 From e-learning to blended learning

From the above it is becoming apparent that further research concerning learning technology use is required (Heinze, Procter et al. 2007:119). In the UK, researchers such as Diana Laurillard and Gilly Salmon have made a significant contribution to what might be termed pure ‘e-learning development’ (Heinze and Procter 2006:240). Unfortunately, this does not address the concerns of those who wish to retain the face-to-face element of learning and teaching whilst utilising e-learning tools. The combination of face-to-face and e-learning is,

and is likely to remain, the main approach to utilising ICT in teaching and learning in HEIs (Bonk and Kim 2005; Collis and van der Wende 2002). As such, it requires to be treated as a special case both from the point of view of research and in this thesis.

The special case of e-learning is referred to as hybrid learning e.g.: (Rossbottom 2001; Woodworth and G. 2007), mixed mode learning e.g.: (Pincas, Saunders et al. 2003; Strømsø, Grøttum et al. 2007); blended learning e.g.: (Bonk and Kim 2005; Oliver and Trigwell 2005) and more recently as blended e-learning e.g.: (Hadjerrouit 2007; Sharpe, Benfield et al. 2006). This work has adopted the term 'blended learning', as a provisional term which will be discussed in more detail in the literature review Chapter.

In 2003, at the start of this research, there was limited research concerning the practice of blended learning in higher education (Procter 2003). However, over the last four years several journal articles, books and academic conferences have focused specifically on blended learning. For example in June 2006 there were two conferences that referred to blended learning: "From Blended learning to Splendid Learning" at the Manchester Metropolitan University Business School and the "Blended learning Conference" at the University of Hertfordshire. Internationally, there were also a number of workshops e.g. the Workshop on Blended Learning and SMEs held in conjunction with the 1st European Conference on Technology Enhanced Learning in Crete, Greece held in October 2006. Blended learning therefore appears to have both gained popularity and stimulated academic interest. Over six hundred books containing the term 'blended learning' have been published (http://books.google.co.uk 2007). These are some of the developments illustrating the importance of blended learning (Bonk and Kim 2005; Littlejohn and Pegler 2007).

Blended learning, as will be seen from the following, is of particular importance to this work. The research was engendered by the advent of a new part-time degree course in information technology in the Information Systems Institute at the University of Salford. The main driver for the course was essentially widening participation. It was believed that new students could be attracted to a part-time course in information technology (Procter 2003). However, the Institute was aware that the traditional attendance pattern for such courses, day release, was no longer viable; business no longer supported such attendance. A blended learning approach which called for a maximum attendance of one evening per week was the agreed mechanism for the delivery of the course. This matter will be discussed in the Chapter 4.

1.3 The areas of this research

This section highlights the main areas or themes of research that require further study. The overall issue of blended learning use on a programme is discussed. More specifically, the themes: the pragmatic implications of blended learning; the pedagogy for blended learning; and the concept of blended learning, are identified as being under-researched and hence are the focus of the work. Research questions relevant to these areas are outlined and anticipated contributions to knowledge are identified. A research scope resolution is proposed and a graphical representation of this study is made within a conceptual framework.

1.3.1 Particular use of blended learning – three themes requiring further research

Because of the relative novelty associated with the use of e-learning there are a number of research questions which need to be answered in order to enable a better understanding of how ICT can really improve teaching and learning (Conole 2004; Conole and Oliver 2007; Procter 2002). In order to advance our understanding in this area it is important to explore working practices and explain these using existing or emerging theories:

> *"We should also begin to see the development of new underpinning theories and models of explanation to account for the use of learning technologies, and perhaps even the emergence of new learning paradigms and working practices."*(Conole 2004:Conclusion)

The three main themes followed in this work will be concerned with the pedagogy of blended learning, the concept of blended learning and the pragmatic implications of the practice of blended learning.

1.3.2 Pragmatic implications of blended learning

The brief discussion of drivers for e-learning at the beginning of this Chapter illustrated that the theory of improvements via e-learning is often remote from the reality (Littlejohn and Pegler 2007). It was also stated that there is a need to advance the knowledge in the area of pedagogy, however, this should be pedagogy which can be applied in practice (Cullen, Hadjivassiliou et al. 2002; Hara and Kling 1999). Further, despite the e-learning tools available, there are still practitioners who do not make effective use of them (Conole and Fill

2005) which suggests a research omission. Additionally, learning should be perceived from the students' perspective (Oliver and Trigwell 2005), and there is a need for further research that takes learners views into consideration (Conole and Oliver 2007:17). Since most of these observations refer to e-learning in general, there is a need for research that is specifically related to the **practice** of **blended learning**.

1.3.3 Blended learning pedagogy

The importance of pedagogy in blended learning should not be underestimated. Nonetheless, some authors (Oliver and Trigwell 2005) think it necessary to point out that blended learning is concerned with student learning. This suggests that not enough attention is being paid to this simple fact. In a "Review of current pedagogic research and practice in the fields of post-compulsory education and lifelong learning", it was highlighted that there was a gap in research that combined **practice and theoretical concepts** (Cullen, Hadjivassiliou et al. 2002). This gap might be attributable to the motivation for adopting e-learning in general and blended learning in particular. As mentioned earlier, pedagogy is not the main driver for the use of technology for educational purposes (Hara and Kling 1999; Littlejohn and Pegler 2007). It is also being stated that there is a need for the theoretical appraisal of ICT related practice in education (Conole 2004). In the light of all of this, this work aims to explore the potential **pedagogic foundations for blended learning**.

1.3.4 Concept of blended learning

It is common for emergent disciplines to have a lack of clear definition and common language (Conole 2002). The area of blended learning research is relatively new. This results in the ill defined term and conception of blended learning and therefore lends itself to localisation (Sharpe, Benfield et al. 2006). This allows staff to 'negotiate their own meaning' (Sharpe, Benfield et al. 2006) and provides a local **conceptualisation of blended learning**. There appears to be a lack of detailed blended learning related studies which draw on students', academic and support staff views, as identified by many open research questions in the area of e-learning [see (Conole and Oliver 2007:19)]. There also appears to be an absence in the literature of material that provides a detailed account of several years of blended learning use. In particular, this work answers the call for in-depth information systems research at a **programme level**, which requires further research (Alavi and Leidner 2001).

1.3.5 Research questions and the contribution to knowledge

From all of the above it is apparent that the thrust of this research will be centred around the main question: **How can blended learning be used to deliver a programme?** In addressing this question a variety of interrelated questions emerge, which, in turn, centre around the questions:

a) What are the **pragmatic** implications of blended learning?
b) How is **pedagogy** affected by blended learning programme delivery?
c) How is blended learning **conceptualised** locally?

In responding to these questions the research should contribute to knowledge in a number of ways. Firstly, and related to the other two contributions, the research will add to the body of knowledge concerning the **practice of blended learning**, both in terms of **pedagogy** and **practice improvement** on the given programme i.e. the pragmatic issues. Secondly, it will add to the general body of knowledge of **blended learning pedagogy** in higher education. In doing this it will provide the rationale for the introduction of blended learning, the design and implementation of programmes and the staff and student responses to them. Thirdly, through an examination of the programme under study it will add to our knowledge of **how blended learning is conceptualised locally** and how such conceptualisation changes with time and experience. Related to this, and to the conceptualisation of other blended learning initiatives, the fundamental question is whether it is possible to provide a conceptualisation for blended learning that is universally applicable.

1.3.6 Conceptual framework

This thesis is a lengthy document, therefore to aid the reader, a conceptual framework has been developed to illustrate diagrammatically the main themes being investigated and their inter-relationships. The conceptual framework is depicted in Figure 1: Conceptual framework: Chapter 1.

At the top of the conceptual framework is a 'focus question' (Novak and Cañas 2007:2). This aids in differentiating the conceptual framework or map from others and provides a context for the assumptions adopted for this work. The three themes of blended learning in this context are examined from distinct perspectives of *pedagogy*, *blended learning concept* and

pragmatic issues. These themes are connected using 'cross links' (Novak and Cañas 2007:2), which are lines with labels signifying their relationships. To illustrate the inter-relationships of the three themes there are arrows at the lower part of the concept which provide the connections. For example, the *pedagogy* theme 'explains the learning process' and therefore has an impact on both the *blended learning concept* theme and the *pragmatic issues* theme. Similarly, the *pragmatic issues* theme 'highlights limitations of practice' and therefore has an impact on the other two themes.

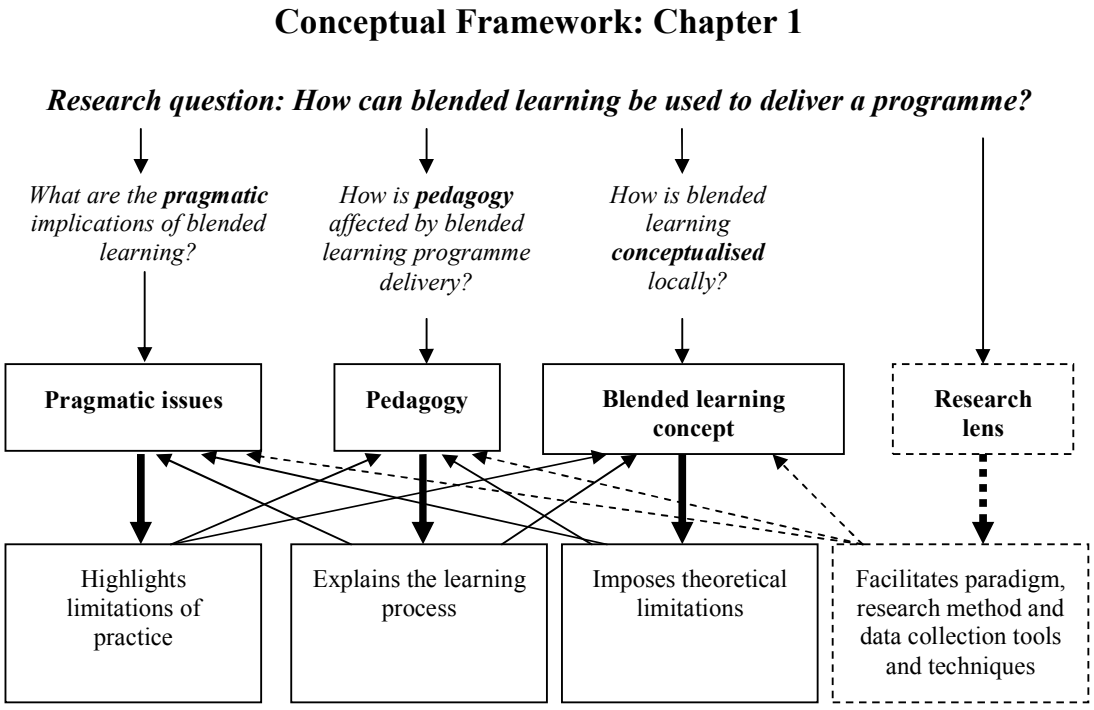

Figure 1: Conceptual framework: Chapter 1

The order in which these three themes are discussed in each Chapter will vary; this is due to their inter-relationship and the attempt to create a 'flow' within the individual Chapters. The research setting informs the way this research will be conducted. The research lens is based on the research paradigm, research method and data collection tools and techniques and will be used to interpret the three themes of interest.

This conceptual framework will be used at the beginning of each subsequent Chapter to set the Chapter into context and highlight the specific issues addressed therein. This will also

remind the reader of the holistic view of this research process and how the individual sections relate to each other.

1.4 Thesis structure

So far this Chapter has set the scene for this research by highlighting the developments of information communication technology and how they have affected learning facilitation. The three themes which were identified as being under-researched are the *pedagogy for blended learning*, the actual *blended learning conceptualisation* and the *pragmatic issues of blended learning*. These were further focused using research questions and their inter-relationship illustrated in the research concept map.

It is believed that an outline of the remaining chapters of the thesis will assist the reader in appreciating the structure of this work. This is given below.

Chapter 2: *Literature review:* This Chapter will draw on existing relevant work concerning the given research area. Influenced by the research question and sub-questions, the focus will be on current pedagogic research, blended learning concepts, and the pragmatic implications of blended learning.

Chapter 3: *Research design:* This Chapter will appraise the main philosophical assumptions, the research methods and data collection techniques within Information Systems research. Based on the given research setting, research questions and author's beliefs, selections in relation to the research process will be made and justified.

Chapter 4: *Research implementation:* This Chapter will describe the implementation of the philosophical assumptions, research method and research tools. The research site will be justified and described. A rich description of data collection process will be provided. Data management and analysis will be outlined highlighting the two stages of data analysis: ad hoc and post hoc.

Chapter 5: *Stage 1: action research cycles one and two:* This Chapter will provide a rich description of the first stage of data analysis describing the first two action research cycles of

this study. It will particularly focus on the pragmatic issues associated with blended learning practice. The observations of practice and staff and students' views will be discussed in the light of the literature.

Chapter 6: *Stage 1: action research cycles three and four:* This Chapter will provide a rich description of the first stage of data analysis describing the latter two action research cycles of this study. Building on the first two action research cycles, cycles three and four will focus particularly on the pedagogic relation to practice. As with the previous Chapter, the observations of practice and staff and students' views will be discussed in the light of the literature.

Chapter 7: *Stage 2: overall findings of current research:* This Chapter will document the second stage of data analysis. Concentrating on the research sub-questions, a holistic view of all data analysis will be adopted. In relation to the *concept* sub-question, the local concept of blended learning will be explained drawing on six inter-related nodes of the 'Fine Structure of the Blended Learning Concept'. In relation to the *pedagogy* sub-question, the analysis will identify the three inter-related 'Key Issues of Blended Learning Pedagogy'. In relation to the *pragmatic issues* sub-question, the analysis will identify three inter-related elements of the 'Bermuda Triangle of Blended Learning'.

Chapter 8: *Discussion:* The penultimate Chapter will compare and contrast findings from the overall action research with the literature. Influenced by the research questions, the comparison will be made between: the 'Fine Structure of the Blended E-learning Concept' and the blended learning concepts found in the literature; the 'Key Issues of Blended E-learning Pedagogy' and relevant pedagogic theories; and the 'Bermuda Triangle of Blended E-learning' and pragmatic issues identified in the literature.

Chapter 9: *Conclusions:* The concluding Chapter will focus on the answers to the adopted research questions. An applicable pedagogic framework will be presented, a local concept of blended learning will be made and pragmatic recommendations for any future blended learning implementation suggested. This Chapter will also evaluate the chosen research process and highlight its limitations. The implications of the findings will be discussed and further study directions proposed.

Chapter 2 Literature review

2.1 Introduction

The previous Chapter introduced the problem area that this work attempts to address. The introduction of information communication technologies or learning technologies in higher education teaching has provoked a number of changes. The main question posed by this work attempts to provide a perspective on how blended learning can be used for the delivery of a programme. To answer this main question, three sub-questions are used to provide focus for this work.

This Chapter will review some of the existing literature. Influenced by the research questions, the focus will be specific to the pedagogic theories, general concepts of blended learning and pragmatic issues surrounding the introduction of learning technology, as highlighted in Figure 2: Conceptual framework: Chapter 2. The Chapter uses a number of specialist terms; their meaning in this work is outlined in the definitions section in the front matter of the thesis**.**

The first section of the Chapter deals with those historical developments in pedagogy which illuminate the shift in emphasis from teaching to learning (Beck 1965; Cullen, Hadjivassiliou et al. 2002). The introduction of technology primarily impacts on the way that teachers and students interact (Laurillard 2002). It therefore pays particular attention to this interaction. Interaction focused pedagogies are perceived as being one of the appropriate underpinnings for blended learning implementation (Heinze, Procter et al. 2007). Teacher-student interaction is examined from the perspective of Conversation Theory. To explore the student-student interaction, theories such as the Zone of Proximal Development, the Johari Window and Communities of Practice are discussed.

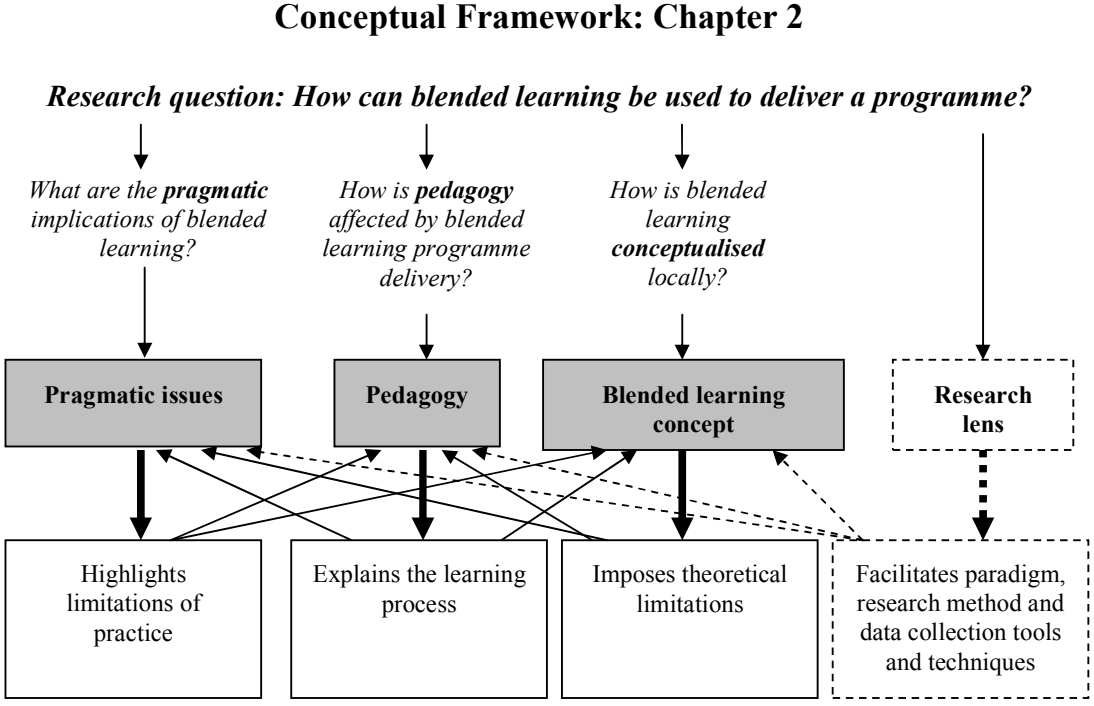

Figure 2: Conceptual framework: Chapter 2

The second section of this Chapter explores the variety of blended learning concepts and interpretations. A definition of blended learning which is compatible with this current work is developed. The focus for the definition is the use of technology for facilitating learning interaction. With utility in mind, the development of the definition is guided by the principle of simplicity.

The final section of this Chapter focuses on the pragmatic issues and describes technology that has been used in higher education. This leads to a discussion of the use of technology in blended learning and theory regarding the introduction/use of technologies. The developments in learning technology and how these can be incorporated in practice are discussed. In particular, a detailed examination of computer assisted learning, e-moderation and assessment is presented.

2.2 Pedagogy

Pedagogy in UK higher education has been influenced by many developments. This section provides a literature review related to these developments. It is subdivided into five sub-sections. The first sub-section examines the evolution from the Greek philosophers to the Roman Church and the medieval universities. The second sub-section draws on the associationist and functionalist debate of the 18th and 19th centuries. The third sub-section is concerned with the behaviourist and constructivist rationale for pedagogy. The fourth sub-section examines the interaction of teachers and students as part of constructivism. This is followed by a sub-section on student-student interactions in the light of relevant pedagogic theories.

2.2.1 Early influences on pedagogy

Learning is one of the oldest activities of humankind. There have been several major developments that have shaped views on how people learn and how they should be taught. These views on the method and practice of teaching are broadly referred to as pedagogy (OED 2004). The concern of Greek philosophers in the 5th century B.C. and Roman Catholic scholars in the 5th century A.D. was essentially the same. It was primarily with the issue of 'What?' should be taught; the 'How?' of pedagogy did not seem to have been addressed (Beck 1965; Butts 1971).

Roman scholarship was introduced by St. Patrick in Ireland in the 5th century and a century later by St. Augustine in England (Beck 1965). Obviously, in bringing Christianity to the British Isles these eminent preachers must have used a variety of teaching methods, however, the 'ex-cathedra' method is the one we most identify with the Church (Stanton 2007). The Church, through its local places of worship and its great Cathedrals, served as roots for both schools and future universities. This has influenced teaching methods and how teachers were perceived as an authority by students, who had to listen and absorb information (Kerr, Gade et al. 1994). The ex-cathedra method still exists in both schools and universities.

The education offered by the church did not meet the needs of the growing trades (Kerr, Gade et al. 1994). Alternatives soon came into being. These were offered by medieval guilds and the schools of the town. One of the main differences of these offerings to those of the Church

education was that the teaching was in vernacular languages instead of Latin (Kerr, Gade et al. 1994). However, there were other differences, particularly in the medieval craft guilds which concentrated on practical skills. A guild apprenticeship where a student worked with his/her master to learn these practical skills lasted from five to eleven years and was based on rigorous periodic examinations. The pedagogic model offered by guilds proved effective and influenced some of the first universities. The university education process also revolved around a master - apprentice concept with the master being the 'expert' and the student being the 'learner', hence concentrating on teaching rather than learning (Beck 1965; Lave and Wenger 2000). However, there were signs of growing student-teacher interaction. Because of the students' desire to know more, questions were often followed by 'disputations' (Beck 1965:39). This is one of the signs that teaching was moving from the monologue of a master to a dialogue between master and his/her students. It was becoming a two way communication process, not a simple repetition of knowledge (Lave and Wenger 2000:169).

Technology made its first major impact on education through the work of Gutenberg and Caxton and the invention of print (Kerr, Gade et al. 1994). This fifteenth century technology allowed pamphlets and books to be produced in relatively large numbers (McLuhan 1962). Learning was no longer restricted to face-to-face encounters; off-site and asynchronous learning was now possible. There was a marked shift in emphasis from teaching to learning.

2.2.2 Associationism - functionalism

Modern educational research in Europe and America essentially started in the 19th century (Kerr, Gade et al. 1994). The first major pedagogic theory that emerged in Germany was that of Johann Friedrich Herbart (1776-1841) (Butts 1971). It was known as Associationism. The Associationist assumption was that the development of ideas was analogous to the real life experience of the way people used the same paths for their movements (Butts 1971). It was thought that new ideas would create new paths in our brains. Herbart believed that if an idea was to be entrenched in someone's mind it would have to be related to something similar which was already well known to the learner. Thus, teachers had to be aware of what the learner already knew and utilize this in their teaching. Herbart had no experimental evidence for this thinking. He referred to himself as a philosopher and psychologist and was concerned with the explanation of the human mind and will (Beck 1965; Butts 1971). From Herbart's point of view, there are five steps in the teaching process: Preparation, Presentation, Association, Generalisation and Application (Beck 1965:98). The preparation step would get

students ready by drawing out any issue related to the topic to be studied. The presentation step would explain the new topic, using concrete examples to explain the theory or concept in question. Association steps would connect the already known with the newly learned, with the differences and similarities highlighted. In the generalisation step students were asked to consider the larger picture and use these ideas in other subjects. The final application step would give students the opportunity to apply the learned theory in practice and appreciate new experiences (Beck 1965:99). These five steps have paved the way for the format of academic publications ever since; this thesis followed these steps in its ordering of the Chapter structure!

Herbart's views were criticised by John Dewey (1859-1952), who observed that all work in a Herbartian class was teacher-and-subject-centred, in which case students were only concerned with remembering and reciting (Dewey 1916). Dewey, on the other hand, was of the opinion that students should learn problem solving (Beck 1965; Butts 1971; Dewey 1916). Dewey echoed Darwin's evolution principles and related evolution to an individual's learning. Dewey's view of the mind was that it is driven by the need for problem solving, rather than the association of already known facts as proposed by Herbart. Although criticising Herbart, Dewey also recognises his main contribution to teaching:

> *"Herbart's great service lay in taking the work of teaching out of the region of routine and accident. He brought it into the sphere of conscious method; it became a conscious business with a definite aim and procedure, instead of being a compound of casual inspiration and subservience to tradition."* (Dewey 1916: Chapter 6)

To counteract Herbart's beliefs, Dewey proposed his own five steps for teachers so that they could engage students in problem solving: The first stage was the student's realisation of a problem, the second the inspection of the problem, followed by hypothesis building which was then proposed and tested experimentally. Then the extension of the hypothesis followed and finally, learning was concluded by the testing of the hypothesis in practice. It is not surprising that Dewey, a follower of Darwin, proposed a process that has great similarities to certain formulations of the scientific method (Butts 1971; Chalmers 1976; Dewey 1916)

2.2.3 Behaviourism – constructivism

The early work of Herbart and Dewey on pedagogy was followed by behaviourism, constructivism and many other pedagogic theories (Butts 1971). The discussion of this sub-

section advances the key differences between behaviourism and constructivism, consequently this sub-section is divided into two themes.

2.2.3.1 Behaviourism

Behaviourism placed the emphasis on teaching and the need for repetition rather than learning as advocated by Dewey. Stemming from the Greek 'didaskein' meaning 'teach' (OED 2004), behaviourism is often linked to didactic pedagogic beliefs, concerned with the instruction of students. Behaviourism was inspired by the work on dogs and their conditioned responses to stimuli by Ivan Pavlov (1849-1946) and was developed by many others including Gagne (1916-2002), Hull (1884-1952), Skinner (1904-1990) and Watson (1878-1958). Behaviourists extrapolated the influence of stimuli and claimed that it is the environment that makes an individual. Therefore, humans and animals were conditioned to exhibit certain behaviour irrespective of their thoughts or feelings (OED 2004). According to Watson's thoughts, the environment was responsible for a baby growing up to be a shoplifter or a law abiding citizen. Again, this work supported the associationist ideas of Herbart, setting aside the role of heredity and making the learner a passive recipient of instructions (Beck 1965:102). This is particularly evident in Watson's assertion:

> *"Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select – doctor, lawyer, artist, merchant-chief and, yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors. I am going beyond my facts and I admit it, but so have the advocates of the contrary and they have been doing it for many thousands of years. Please note that when this experiment is made I am to be allowed to specify the way the children are to be brought up and the type of world they have to live in"*(Watson 1997:82)

The only difference to these children's development would be the environment in which they were brought up. Watson analysed the preceding thinking of psychology and suggested that fear was one of the main stimuli for motivation (Watson 1997). Different motivators to learning such as the use of electric shocks (Watson 1997), highlight the need for a motivator in order to encourage learning of a certain response. Behaviourism developed the associationist thinking for teaching on a larger scale; instead of a single session the emphasis was on the learning of a subject-field. One of the consequences in dealing with large subjects was to break them down into smaller steps and re-enforce their learning:

> *"The whole process of becoming competent in any field must be divided into a very large number of very small steps, and reinforcement must be contingent upon the accomplishment of each step. This solution to the problem of creating a complex repertoire of behaviour also solves the problem of maintaining the behaviour in strength. … By making each successive step as small as possible, the frequency of reinforcement can be raised to a maximum, while the possibly aversive consequences of being wrong are reduced to a minimum."* (Skinner 1954:94)

Behaviourist thought was very popular in the 20th century, to the extent that most official activities, such as passing a driving test, are seen to represent an objective measurement of the learners' ability, at the end of the learning process (Shepard 2000). The following three characteristics of behaviourist teaching highlight the role of assessment in learning as an essential part. Since assessment, or in this case tests, are essential to ensure competence in a subject, they are equated to learning and serve as a motivating factor:

> *"Tests should be used frequently to ensure mastery before proceeding to the next objective;… Tests are isomorphic with learning (tests = learning); … Motivation is external and based on positive reinforcement of many small steps."* (Shepard 2000:5)

The next theory considered is that of constructivism. This advances the early debate on the roles of the teacher and learner in the work of Herbart and Dewey.

2.2.3.2 Constructivism

So far we can see an emerging trend of two prominent schools of thought: one that focuses on the role of *teacher and teaching* and the other that emphasises the *learner and learning*. The historic development of universities that inherited their teaching styles from guilds and cathedrals placed an emphasis on a teacher as being the expert who would pass on his knowledge to students. Dewey was one of the opponents of this. He supported the learning centred educational processes focusing on the students and learning motivation. The last decades of the 20th century were dominated by two pedagogic theories: behaviourism and constructivism (Sherry 1996). Educational research in the 21st century finds itself in a paradigm shift from the didactic to the constructivist pedagogy, based on the following four pedagogic methods: expository methods, interactive methods, conversational methods and experiential methods (Cullen, Hadjivassiliou et al. 2002:11). We will now explore some of the underlying constructivist beliefs, placing emphasis on the conversational methods.

The constructivist advocates include Jean Piaget (1896-1980), John Dewey (1859-1952) and Lev Semenovich Vygotsky (1896-1934) (Shepard 2000). The basic beliefs of the constructivists are that learning is a building-block based process in which certain stages had to be dealt with first before moving on to the next stage. The stages approach is similar to behaviourism, however, the differences are to be found in: a) the roles of the learner and the teacher and b) the acknowledgement by constructivists that learning is a socially and culturally determined activity (Shepard 2000). Instead of presenting stimuli to generate a response, the constructivist view suggests that it is the 'facilitation' of learning that is important and hence the role of the teacher is to move

> *"from Sage on the Stage to Guide on the Side"* (King 1993)

The 'sage on the stage' however, represents the perspective held by behaviourist scholars. In constructivism, the learners are developed through social interaction with more capable others; the argument being that learning is primarily a social process (Shepard 2000). This view of learning was already highlighted by Dewey in his debate with Herbart. Dewey's contributions are therefore acknowledged:

> *"Theory and a set of practices around learning [were] based originally on the work of John Dewey. The term [constructivism] refers to the idea that learners construct knowledge for themselves – each learner individually (and socially) constructs meaning – as he or she learns. Constructing meaning is learning; there is no other kind."* (Cullen, Hadjivassiliou et al. 2002:5)

A number of authors have built upon this concept which, in the western world, essentially draws on the work of Dewey; Vygotsky's work was not accessible due to the Cold War and the language barrier (Vygotsky 1962:vi). Whichever source is followed, there is a general agreement that the main characteristic of constructivism is rejection of the didactic model of teaching. The emphasis is on the process of actively building learners' skills and knowledge (Laurillard 2002:67). Generally, constructivism is concerned with learning through interaction with the world and is based on two tenets:

> *"1) learning is an active process of constructing rather than acquiring knowledge, and 2) instruction is a process of supporting that construction rather than communicating knowledge."* (Duffy and Cunningham 1996:171)

As can be seen here these two tenets are essentially the arguments that Dewey used against the early work of Herbart. The behaviourist - constructivist divide amongst university teachers is also characterised by the conceptions of teaching as being either 'teacher-centred/content orientated' or 'student-centred/learning oriented' (Kember 1997). However, in a review of current pedagogic research it was suggested that constructivist theory was becoming the predominant view influencing new pedagogy and one which is applied in four different ways:

> *"…expository methods; interactive methods;* ***conversational methods*** *and experiential methods…."* (Cullen, Hadjivassiliou et al. 2002:11)

It is not the intention of this work to explore all of the ways in which constructivism could be implemented. This is outside of the scope of this research and has been done by others [see for example (Conole, Dyke et al. 2004)]. The emphasis of the current work is on the student – student and teacher-student interactions, and therefore the two are examined here. Teacher-student interactions are examined in the light of conversational methods and the student-student interactions are examined in the light of the social theories of learning. In doing this one is aware that pedagogic theories can be:

> *"…joined up as compatible sub-themes"*(Mayes 2007:84)

2.2.4 Teacher - student interaction

Constructivists, particularly social constructivists, recognise the individuality of learners and their social nature. Thus, individuals are at the centre of the learning process and teachers are there to facilitate their learning. The following quote from Vygotsky (1962) emphasises the social nature of psychological functions and psychological processes present in learning:

> *"All higher psychological functions are internalised relationships of the social kind, and constitute the social structure of personality. Their composition, genetic structure, ways of functioning, in one word, all their nature – is social. Even when they have become psychological processes, their nature remains quasi-social. The human being who is alone retains the function of interaction."* (Daniels 2005:81)

One of the theories which deals with the teacher-student interaction is the Conversational Framework, which is widely recognised as a major influence on the pedagogic design of Virtual Learning Environments (Cullen, Hadjivassiliou et al. 2002:59). Since the

Conversational Framework has roots in Conversation Theory and Learning Conversation, these also need to be examined.

2.2.4.1 Conversation Theory

The constructivist paradigm was advanced in the 1970's through Conversation Theory as developed by Gordon Pask (1928 -1996) and others (Scott 2001b). Conversation Theory is generally a concept of interaction between the teacher and the learner where

> *"…one participant (the teacher) wishes to expound a body of knowledge to a second participant (the learner)."* (Scott 2001a:3)

Some of the underlying assumptions of Conversation Theory are: firstly, that all human beings are learning systems which are continuously engaged in learning activities; secondly, that motivation should focus on what is learned and why it is learned; and finally, if one can 'teach back something', then it is considered as remembered:

> *"The brain/body system is a dynamic self-organising, "variety eating", adaptive and habituating system, subject to boredom and fatigue. As Pask often put it, "Man is a system that needs to learn", thus the problem of motivation is not "that we learn" it is rather* ***what*** *is learned and* ***why****. …. For humans, learning is also about the construction of symbolic representations, subject to constraints of logical coherence, acquired through the medium of dialogic, conversational interaction and the inner dialogic processes of strategic and tactical attention directing. In conversation, narrative forms are constructed and exchanged (Scott, 1999, Laurillard, Stratfold et al 1999, Bruner 1996). What is memorable is that which can be "taught back" (Pask and Scott, 1972)."* (Scott 2001a:3)

These beliefs go back to Dewey's thoughts on students' motivation in learning and the creation of encounters that allow learning to be contextualised. It is also in line with the work of William Glasser, which suggests that most people learn only about 10 % of what they read, 20% of what they hear, 30% of what they see, 50% of what they hear and see, and that higher levels of learning – 70%- occur with subjects that people discuss together, 80% of what they use and do in real life and finally, most learning takes place when people teach someone else (Biggs 1999).

Pask's 'Skeleton of Conversation' is depicted in Figure 3: Skeleton of Conversation adapted after Scott (2001a:5). This representation maps out the basics of the interaction between

teacher and learner. The horizontal arrows depict the interaction of questions and answers. This verbal communication happens on two levels: the 'Why?' and the 'How?'. The 'Why?' (comprehension learning) level sets out a context in which the 'How?' becomes meaningful. The 'How?' (operation learning) is concerned with an understanding of the topic itself. The vertical lines on the other hand represent causal connections such as feedback. At the bottom of the figure is the practical modelling representation of the theory concerned. Thus a topic can be deemed as having been understood if a learner is able to demonstrate that they can 'teach back' the practical elements as well as the verbal explanations of 'How?' and 'Why?' (Scott 2001a).

The psychologists Harri-Augstein and Thomas utilised Conversation Theory and advanced it by emphasizing 'How?' the learning process should be implemented and the motivation for this process. The questions being answered in addition to the 'How?' and 'Why?' of the topic being taught should also address the issues of 'How?' and 'Why?' of learning. They highlighted the need for "conversational encounters" to achieve significant learning:

> *"…personally significant and valued learning… is achieved by exercising the freedom to learn in 'conversational encounters', which are valued by using criteria that arise from within the experience itself."* (Harri-Augstein and Thomas 1991:9)

Their emphasis goes beyond the notion of problem solving or problem based learning (Dewey 1938) to awareness, review and reflection upon an experience of learning. A 'full' Learning Conversation would therefore consciously include answers to the following questions (Scott 2001a:7): **'Why of learning?',** conversation about the purposes of learning and the subsequent motivation; **'How of learning?',** conversations about learning as a process and **'Why and How of Topic?',** subject related discourse. The reflection upon 'Why and How of learning' affects individuals' beliefs, values, needs and purposes and hence the emphasis on *learning how to learn* is the contribution of Harry-Augstein and Thomas (Scott 2001a:7). Their modification to Conversation Theory is also referred to as a 'Learning Conversation' (Harri-Augstein and Thomas 1991).

The next sub-section of this Chapter will examine another interpretation of the Conversation Theory that of Conversational Framework. This has gained popularity in particular for those scholars interested in the development of learning technologies facilitated learning, for example (Britain and Liber 2004; Conole and Oliver 1998).

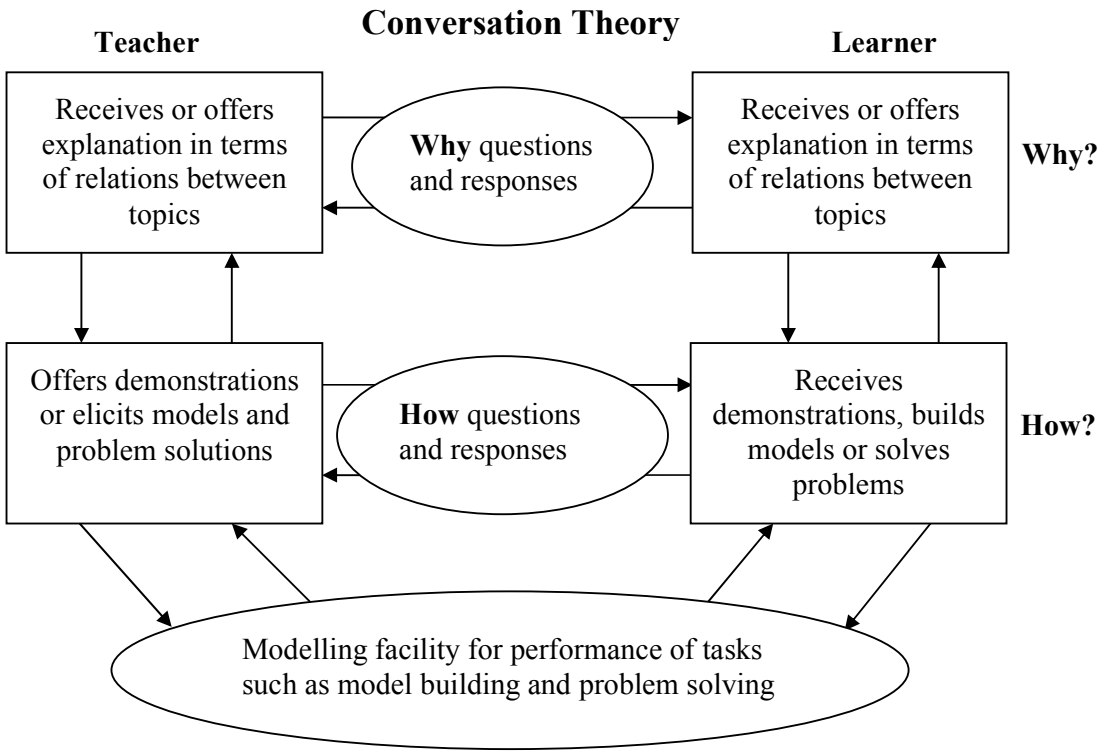

Figure 3: Skeleton of Conversation adapted after Scott (2001a:5)

2.2.4.2 Conversational Framework

The original concept of Conversation Theory as developed by Gordon Pask, Bernard Scott and others was advanced in the Conversational Framework (Scott 2001). Diana Laurillard developed a new framework for the effective use of learning technologies (Laurillard 1993; Laurillard 2002). The teaching strategy assumed for this framework is that the following requirements for a learning situation should be fulfilled:

> *"it must operate as an iterative dialogue; which must be discursive, adaptive, interactive and reflective; and which must operate at a level of description of a topic; and the level of actions within a related tasks."* (Laurillard 2002:86)

She identified twelve stages that are recommended to take place when teaching students. These are depicted in

Figure 4: Conversational Framework adapted after Laurillard (2002:87). The framework includes three cycles in which a learner has the opportunity to communicate with the teacher.

In the first cycle the student is given the opportunity to engage in a dialogue with the teacher, describing and re-describing the understanding of the topic purpose (Steps 1 – 4). During the interaction, both the teacher and the learner are going through an adaptive process where they adjust their task and activities based on each other's response (Steps 5 and 10). The second cycle involves setting a goal for the student and the student's participation in an activity (Steps 6 and 7). The third cycle (Steps 8 and 9) builds on the actions of the second cycle and provides the student with feedback, which can result in another activity. The cycles are concluded by individual reflections on the concept under discussion in the light of the student's experience (Steps 11 and 12) (Ibid.:86).

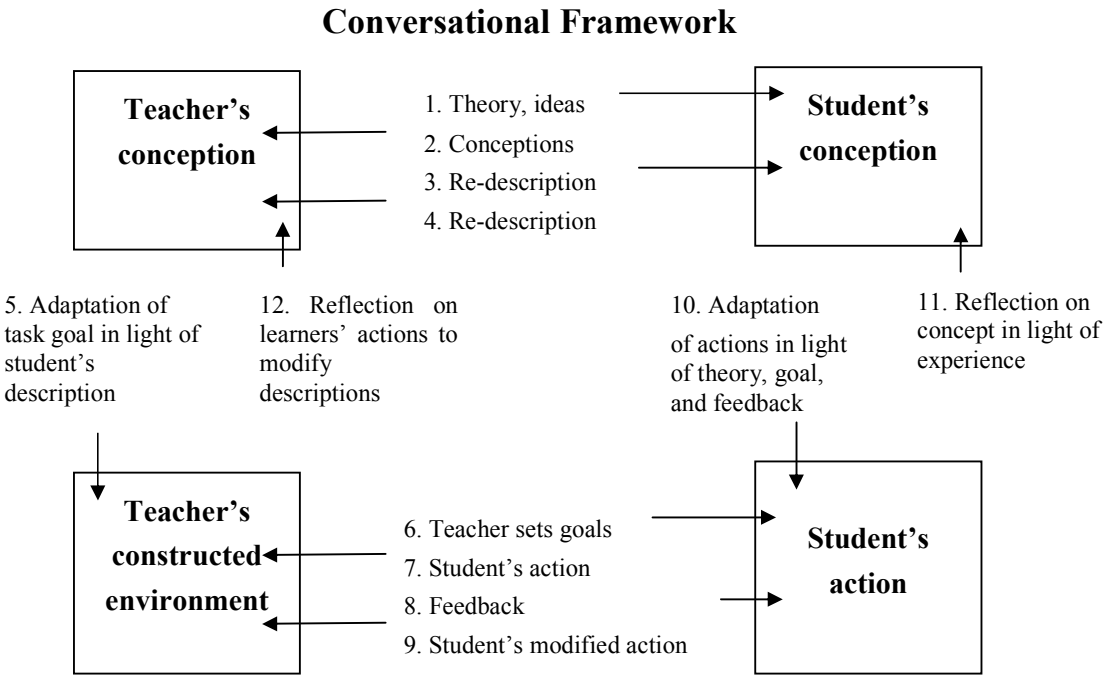

Figure 4: Conversational Framework adapted after Laurillard (2002:87)

The important issue emerging from the Conversational Framework, is the iterative dialogic nature of the model, requiring at least three engagements with one topic, meaning that a student will have the opportunity to improve on the same task (Heinze and Procter 2006:239). This, in advocating a student-centred approach, contradicts the didactic model of teaching. Another benefit offered by the Conversational Framework is that it can be used for communication media appraisal (Conole and Oliver 1998). Each step of the Framework can be appraised to discuss the way that different media is to be used (Laurillard 2006).

The Conversational Framework is subject to criticism and one of the key arguments is that despite its popularity, this model is rarely used in practice (Dyke, Conole et al. 2007:84). Some of the limitations of this framework are associated with a) the prescriptive nature of the interaction, which does not allow for differences in the practitioners' styles, and b) lacks detail for a comparison of media types (Conole and Oliver 1998:8).

2.2.5 Student – student interaction

So far we have examined the development that surrounds the conversational methods of learning and teaching, which primarily focus on teacher – student communication. We will now turn our attention to the student- student communication and the related peer learning elements. There are a number of theories that look at the development of the individual in a group environment by realising that the conventional teacher role is not the only one that shapes our understanding and everyday learning. It is not the objective of this work to provide an exhaustive list of all references but to outline the main points supporting beliefs about student-student interaction.

2.2.5.1 Johari Window

The benefits of group learning are also emphasised by the Johari Window, see Figure 5: Johari Window, adapted after Thurlow, Lengel et al. (2004:103), which was named after ***Jo***seph Luft and ***Harry*** Ingham (Luft and Ingham 1955a) (Thurlow, Lengel et al. 2004). In the Johari Window learning is perceived in multiple dimensions: It is 'Public' when self and others know it. It is 'Unconscious' when it is unknown to self and others. It is 'Blind' when only the other can see it, and it is 'Hidden' when it is known only to ourselves. It is believed that cooperative working can achieve a shift of learning to the 'Public' quadrant of the window (see arrow in the figure below). This shift will enable learning from each other, about oneself and about others. All of this adds to the learning experience of the student. This thinking is subject to limitations (McConnell 1999). In the case of an unwilling learner or an unwilling co-operator, which can result from a group with strong personalities or different viewpoints, a fragmentation will occur and the expected benefits are unlikely to be achieved. The view that learning is often tacit and unstructured demands new ways allowing learning to be contextualised:

> *"Some of the most powerful training experiences are often unconventional and not in the common tool kit of an instructional designer. Consider a lunch conversation. A new manager will probably get more value and learning from a targeted invitation to lunch with a senior manager than from several hours in a class or several modules in an e-learning course. When we expand our thinking about blended learning, we recognise that the experiences are a big piece of the mix."* (Masie 2005:25)

Johari Window highlights the benefit of a critical friend (Swaffield 2002), a person who would be able to communicate with the learner, provide them with feedback and highlights the importance of such feedback (Thurlow, Lengel et al. 2004). This model also allows a structure to enrich self-development and interpersonal relationships (Whittaker and Cartwright 2000:12). It also highlights the negative effect of open communication which in certain circumstances might be unsuitable or even dysfunctional (Thurlow, Lengel et al. 2004). This can be illustrated by an example of a student with an extraordinary large Public area, who might not be sensitive to others and who could cause distress and misinterpretation. Other students and teachers in a functioning group are the mentors – everyone is a mentor and everyone is a learner (Thurlow, Lengel et al. 2004).

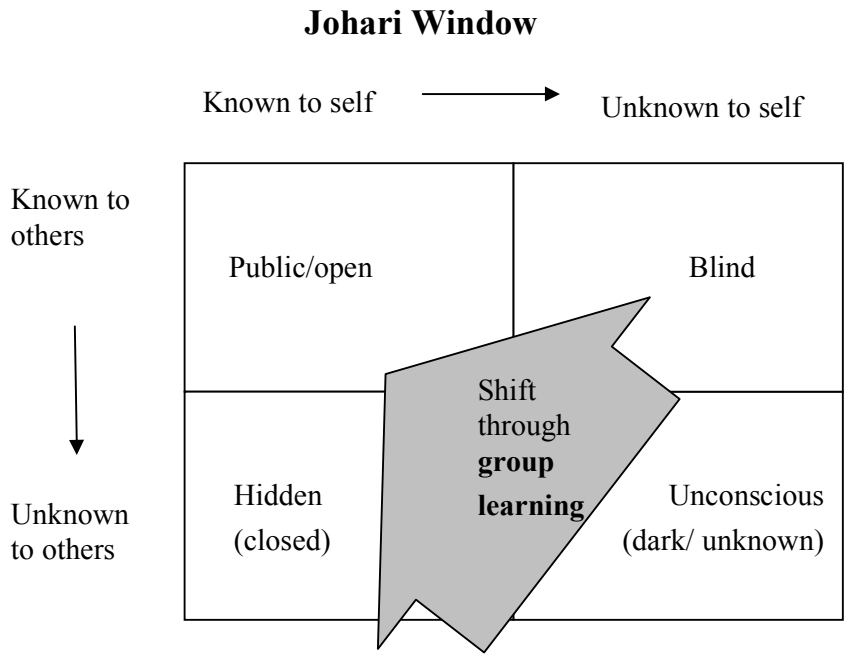

Figure 5: Johari Window, adapted after Thurlow, Lengel et al. (2004:103)

2.2.5.2 Zone of Proximal Development and Communities of Practice

Group dynamics and the study of students in a group has been examined by a number of researchers. One of the key figures in this research is Lev Vygotsky whose work on the Zone

of Proximal Development (ZPD) is of particular importance (Cottrell 2001; DeVries 2000). Vygotsky produced concepts that were later developed by colleagues such as Luria and Leontiev. One of these is the Zone of Proximal Development, defined by Vygotsky as:

> *"…the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers."* (Vygotsky 1935:86)

In other words the emphasis in the ZPD is to enhance the problem solving skills of individuals and this is done through interaction with peers who are competent in the subject. The zone of learning is therefore the difference between the knowledge of a competent peer and the existing knowledge of the learner. To facilitate learning, the learner would interact with the peer to elicit the problem solving skills.

The consequence to practice of such beliefs is the increased role of mediation of learning and the role of mentors, who are the capable peers. Essentially, the ZPD highlights the developing potential of an individual when collaborating with others or when supported by competent facilitators. This type of constructivism is labelled as culturally determined (Cullen, Hadjivassiliou et al. 2002:75). Vygotsky's thinking is that the culture in which people develop determines their internal cognitive processes such as memory, language etc (DeVries 2000). Culture encompasses social interactions, overall environmental influences, our judgement, and the way we pay attention to certain events (Vygotsky 1962). All of this, in turn, creates value systems and our perceptions within these.

The ZPD allows us to explain the success of facilitated groups such as Alcoholics Anonymous and Weight Watchers. These are prime examples of co-operative group power (Rogers 1989:75). These examples demonstrate that participants, although possibly failing individually, can be successful as an active member of a group.

Echoes of Lev Vygotsky can also be found in the thinking on Communities of Practice (CoP) as advocated by Wenger (Wenger 1998b:282). Although predominantly focussed on the commercial environment, the work of Wenger allows us to look at education from a new angle, namely, addressing the need for continuous professional development and life long

learning. In their simple form, Communities of Practice are networks of practitioners who are interested and willing to engage in a group and share their experience of practice:

> *"Communities of practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis."* (Wenger, McDermott et al. 2002:4)

People in such groups do not necessarily work together, they can simply share a common interest. They do this in such in a way that they interact and learn from each other. Examples of communities of practice include: engineers who work on a same project and compare their designs; artists meeting in cafés and discussing latest trends, or even gang members who share their experience of survival (Wenger, McDermott et al. 2002). In an interview, Wenger goes one step further than building a network of associates that meet to get a brief from a central source. Community of Practice members provide knowledge to one another:

> *"Learning is best understood as an interaction among practitioners, rather than a process in which a producer provides knowledge to a consumer"*(Kahan 2004:28)

In terms of Vygotsky, Communities of Practice are therefore creating a Zone of Proximal Development with capable peers. There is no one 'sage on the stage' who is the knowledge source but all individuals have an equal right to share their experience, and their stories are valuable contributions to the whole community. In their structural model, CoP's share three fundamental elements. These are: a) a '*domain'* of knowledge (outlining a set of issues), b) a '*community'* of people who are interested in this domain and c) the shared *'practice'* that they are constructing to be effective in their domain (Wenger, McDermott et al. 2002:27). The '*domain'* of knowledge provides a focus for the community and a source of problems and boundaries which determine which activities are worth pursuing. The '*community*' denotes the social nature of learning, which builds on interactions and is fuelled by mutual respect and trust. This allows an honest discussion where participants are able to ask difficult questions, expose unawareness, and promote careful listening (Ibid.). The '*practice*' is the set of conceptual frameworks, ideas, stories, language, styles and documents that are shared amongst the community members (Ibid.).

Because of the Internet and the consequent information available, professionals increasingly expect learning to be engaging (Kahan 2004). Information is available to everyone, but it is the experience of that information in context that is interesting to participants. In particular,

Wenger suggests that the aspect of story telling and anecdotal evidence that the individuals can identify with, can work to bring out the identity of the individuals themselves. The concept of Communities of Practice was identified by Bell (2001; 2003) as an opportunity to establish e-learning communities in educational settings (Bell 2001; Bell 2003).

2.3 Concept of blended learning

The previous sections highlight different interpretations of the learning process and the consequence of these in the method of teaching. In this section, the different perceptions of blended learning are given in order to understand how it can be addressed pedagogically. This section is subdivided into two sub-sections. The main discussions surrounding this controversial term are highlighted in the first sub-section. This is followed by the second sub-section which outlines a preliminary definition of blended learning.

2.3.1 Confusion surrounding the blended learning concept

It is widely recognised that the term blended learning is subject to multiple definitions (Oliver and Trigwell 2005; Salmon 2005; Sharpe, Benfield et al. 2006). Eight dimensions of different *blends* were identified in a UK wide study of undergraduate experience of blended learning. These are outlined in Table 1: Eight dimensions of blended learning adapted after (Sharpe, Benfield et al. 2006:18).

The table highlights that only the first three dimensions of *delivery*, *technology* and *chronology* are consistent with the historic use of the term in relation to the use of technologies to facilitate distance and face-to-face modes of learning (Sharpe, Benfield et al. 2006:21). The *delivery* dimension of blended learning emphasises modes which include a combination of face-to-face and distance education, this is in line with the traditional interpretation where the distance education part of the delivery could be the conventional post, radio or television. The *technology* dimension of blended learning emphasises a variety of web based technologies and highlights the use of online technologies to facilitate learning, this includes the use of email which again is in line with traditional distance education. The *chronology* dimension of blended learning highlights the use of synchronous and asynchronous interventions. If considered from an historic perspective, these could refer to

face-to-face sessions (synchronous) and conventional correspondence (asynchronous) sessions.

Eight dimensions of blended learning	
Type of blend:	Example
delivery	different modes (face-to-face and distance education)
technology	mixtures of (web based) technologies
chronology	Synchronous and asynchronous interventions
locus	practice-based vs. class-room based learning
roles	multi-disciplinary or professional groupings
pedagogy	different pedagogical approaches
focus	acknowledging different aims
direction	instructor-directed vs. autonomous or learner-directed learning

Table 1: Eight dimensions of blended learning adapted after (Sharpe, Benfield et al. 2006:18)

The confusion which could arise from the eight different interpretations of blended learning is perpetuated in the international literature. A definition of blended learning that highlights the combination of face-to-face and computer mediated instruction is assumed by Charles Graham who states that:

> *"blended learning systems combine face-to-face instruction with computer mediated instruction."* (Graham 2005:3)

This definition focuses on the teachers' side of systemic blended learning and implies a particular approach to teaching pedagogy – instruction. Yet other authors categorise blended learning based on the stakeholders of the process:

> *"Learner Perspective: ...is the ability to choose among ALL available facilities, technology, media and materials matching those that apply to my prior knowledge and style of learning as I deem appropriate to achieve an instructional goal (the salad bar metaphor). ... Designer/Teacher Perspective: ...is the organization and distribution of ALL available facilities, technology, media and materials to achieve an instructional goal even when many of these things may overlap. ... Administrator Perspective: ...is the organization and distribution of as many cost effective facilities, technology,*

> *media and materials as economically viable to achieve an instructional goal even when many of these things may overlap."* (Orey 2003)

Orey's views on blended learning underline the idea that it can mean different things to different people depending on their role in the learning process. The difference in views of what blended learning is creates a need for common understanding. Some argue that the very confusion surrounding the term blended learning allows the term to be contextualised and locally negotiated and therefore fills this term with potential (Driscoll 2002; Sharpe, Benfield et al. 2006). Yet others argue that this leads to the lack of comparison and misunderstandings when using this term:

> *"The term 'blended learning' is ill-defined and inconsistently used. Whilst its popularity is increasing, its clarity is not. Under any current definition, it is either incoherent or redundant as a concept"* (Oliver and Trigwell 2005:24)

The current work accepts the idea that the very confusion surrounding the term blended learning fills it with potential. There is obviously a need for the term to be contextualised – in this case, its use in a part-time programme for mature students. However, this does not preclude the development of a definition that might also be of wide utility.

2.3.2 Preliminary local definition of blended learning

The Collins Dictionary defines the meaning of 'blend' as '*to mix ... together to improve quality'* (Collins Dictionary 2008). The Oxford English Dictionary defines 'blend' as to '*mix together so as to make a product of a desired quality*' (OED 2004). In both of these, the underlying assumption is that something is going to be improved as a result of the blending action (Heinze and Procter 2006). This is compatible with the aim of blended learning to improve quality and will therefore be taken on-board in our search for a definition of blended learning.

Learning has to be perceived from the learners' perspective to reflect recent pedagogic developments (Oliver and Trigwell 2005:22). This view positions the learner at the centre of control of their learning in order to enable them to see what is best for them:

> *"I started to use the phrase "magic is in the mix" when blended learning became popular as a term in the 1990s. The magic is the power of adding two or more*

> *learning elements. Learners have always known this. They have been blending learning for thousands of years. They add what is missing, they mix it with what they need, and they subtract what is not valuable. They socialise it. They find context, and they transform training and instruction into learning"* (Masie 2005:23)

The idea of placing the learner at the centre of a definition for blended learning is attractive. However, in a research where the major issue was the blending of the use of learning technologies and face-to-face delivery, it seemed appropriate to build any definition around the *media* of delivery. *Delivery* is the most used dimension mode in UK higher education (Sharpe, Benfield et al. 2006:24). Obviously, learner centeredness and learning facilitation will have to be taken onboard. However, in the first instance blended learning is considered to be about delivery and delivery media. One common theme that appears in the blended learning related international literature is the perception of blended learning that incorporates online and face-to-face aspects (Graham 2005; Oliver and Trigwell 2005; Sharpe, Benfield et al. 2006). When asking a question on the future of blended learning 'face-to-face and online' were the chosen words:

> *"What percentage of student learning in your college, university, or organisation is blended (i.e. courses having **online as well as face-to-face** components) today and how might this change in 3 years and in a decade?"* (Bonk and Kim 2005:554)

Before taking this argument any further, it is important that we place blended learning in the context of e-learning. This was initially done in the introductory Chapter. Now it will be done, following Procter (2002) so as to give a Spectrum of E-learning, this is given below.

Spectrum of E-learning

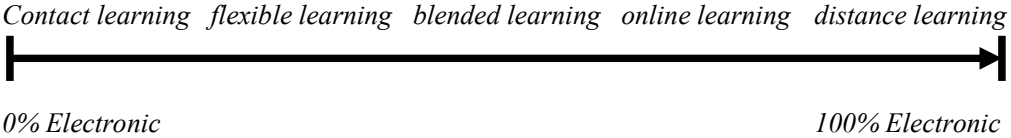

Figure 6: Spectrum of E-learning adapted after Procter (2002:3)

When considering different types of e-learning, it enables us to identify where blended learning is situated. The perspective on blended learning is that it is positioned somewhere in between the face-to-face – contact learning (0% electronic) and extreme cases of distance

learning (100 % electronic) as depicted in Figure 6: Spectrum of E-learning adapted after Procter (2002:3).

This Spectrum of E-learning suggests that any definition of blended learning should take on board the level of technology used by the learner i.e. where between 0 and 100% electronic delivery the learning takes place. However, this by itself only tells part of the story; one also has to take on board the time the learner spends engaged with such technology. An attempt to bring together level of technology and the time of engagement with the technology is given in Figure 7: Concept of Blended Learning adapted after Heinze and Procter (2004:2).

In this Figure, the rectangle on the far left (face-to-face) gives the technology/ time space for face-to-face learning. What actually happens in any given face-to-face programme of learning could be represented anywhere within this space. A rectangle representing the technology/time space for online learning is given on the far left. The blended learning technology/time rectangle can have overlap with both online and face-to-face. This is to be expected since for example a fully online course could have an annual face-to-face meeting, but this does not make the learning blended.

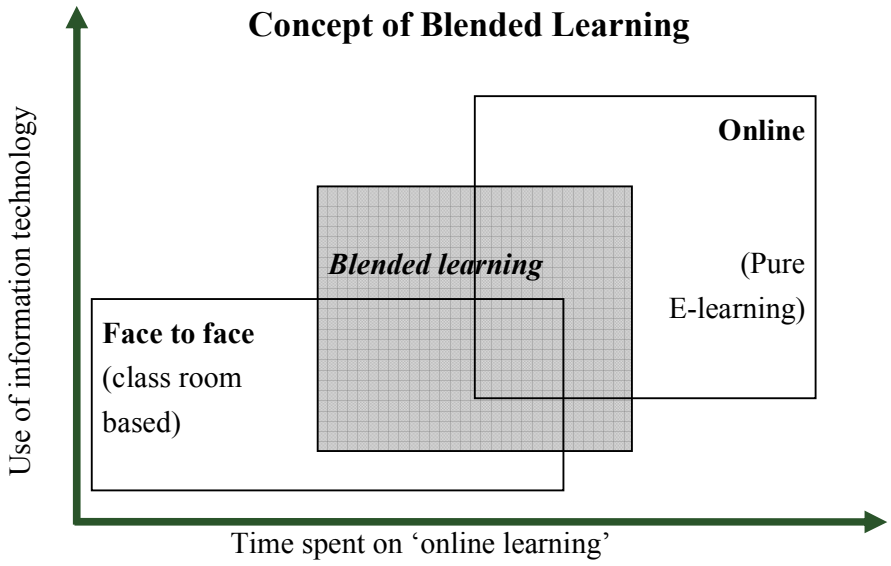

Figure 7: Concept of Blended Learning adapted after Heinze and Procter (2004:2)

The use of technology/time concept is most useful in attempting to arrive at a definition for blended learning which is centred on delivery. However, by itself the diagram cannot come to terms with how improved student learning takes place. Nonetheless, knowing that improved student learning must be addressed one can give a preliminary definition for blended learning, this appears below:

Blended learning is the delivery of teaching/learning through the combination of online and face-to-face interaction resulting in improved student learning.

This definition will be developed in the light of the information collected during the research. In turn, the definition will guide the research.

The next section will focus on practical aspects of blended learning implementation. Since the face-to-face learning can be considered as well established, the emphasis in the next section is on online learning and associated learning technologies and theories which enable it.

2.4 Practice of blended learning

So far, this Chapter has provided pedagogical background surrounding the learning process and has emphasised the paradigm shift of emphasis from teaching to learning. It has also addressed the issue of a preliminary definition for blended learning. The final section of this Chapter examines the practical implications associated with blended learning. Particular emphasis is placed on the electronically facilitated learning part within the blend. This section is subdivided into two sub-sections, the first focusing on the general tools available in e-learning and the second sub-section draws our attention to the e-learning technique called e-moderation.

2.4.1 E-learning tools

It is worth noting that the delivery mode facilitated via the World Wide Web is relatively 'young' when compared to some of the other technologies that have made an impact on education. Before the World Wide Web the technology that had the greatest impact on education was the printing press by Johannes Gutenberg in about 1450 (Hofmann 2005). The printing press made the publication of books and pamphlets quicker and cheaper (Monsen

2000). The greater availability of such publications enabled the students to get information not only from their teacher and the occasional use of a book but also from books. Learning no longer had to be synchronous with teaching. Further, in principle, distance learning became a possibility as did mass education (Ellington 1993). However, other technologies needed to be developed along with societal changes before such concepts could come to fruition.

In the last 150 years the telephone, radio, television, recording technology, the computer and the World Wide Web have together created educational possibilities that those living in the time of Gutenberg could not have dreamed of (Ellington 1993). Along with these technological developments societies have developed. In that time the need for more educated and trained workforce became apparent and expansions of both the secondary and higher education systems took place (Beck 1965). The following table summarises some of the main developments so far: Table 2: Tools for educational use.

Tools for educational use	
Year	**Technological development:**
1450	Johannes Gutenberg introduces the first Western printing press
1840	First correspondence study (a secretarial programme focused on teaching shorthand)
1900s	Audio recordings
1920s	Radio stations
1930s	Television
1960s	Pre- World Wide Web Internet (text-based databases and discussion boards)
1980s	Fibre optic, audiovisual tech/CD-ROM
1990s	World Wide Web

Table 2: Tools for educational use adapted after (Hofmann 2005:29)

As with similar tables, Hoffmann's is guilty of omissions. It is quite easy to see that the telephone, the postal service and the computer should have a place in a table relating technology to developments in education. Nonetheless, one can see from this table that after

Gutenberg one had to wait almost 400 years before technology started to have a major impact on education.

There have been a number of inventions that promised the redundancy of the face-to-face session, however, these promises have never delivered (Hofmann 2005:29). Unlike in the medieval universities, where students lived on or near the premises of the institution, communication technology makes it possible for learning to take place over a distance (Galusha 1997). In the US it was the first correspondence study (a secretarial programme focused on teaching shorthand) in 1840 that was offered over distance (Hofmann 2005:29). In England there is historic evidence to suggest that there were different variations of Open Universities as far back as 1877 (Bell and Tight 1993). The belief that students can learn from a teacher who is geographically remote were conceptualised in 1973 by Moore's theory of independent study (Galusha 1997). The term "distance learning" is usually associated with a geographical division of learner and teacher, the autonomy of the learner, and intermittent communication between the learner and the teacher utilising media other than face-to-face sessions (Sherry 1996).

The British Open University, established in the 1960's demonstrated once and for all that the concept of distance learning, when tied to communication technologies could operate very successfully (The Open University 2008). It operated using materials which included books, TV and Radio programmes and face-to-face instruction. It became one of the world's largest – based on the number of students – universities (Eisenstadt and Dzbor 2002; The Open University 2008). Developments in the Open University have much to teach those who are undertaking blended learning.

By the middle of the twentieth century technologies such as radio and television were used to accompany or supersede books (see Table 2: Tools for educational use). Television had its limitations and it was found that experts in a particular subject were not necessarily the most charismatic individuals and hence unable to keep the attention of the audience. More significantly there was the limitation of one way communication (Sherry 1996). The introduction of Information Communication Technology enabled two way communication by providing tools such as emails, online discussion boards etc.

There have been a number of technological advances, which can be used to facilitate two way communication. The convergence of stand alone and networked computers is becoming a standard in higher education (Collis 2002). With technology such as email and Virtual Learning Environments (VLE), Universities are becoming proficient in offering online services based on networks (Britain and Liber 2004; Conole 2002).

In an analysis of 113 European institutions a total of 87 VLEs were identified and the majority of these provided sufficient capabilities for successfully delivering online education (Paulsen 2003). The proprietors of the VLEs are offering the basic platform for learning facilitation which leaves the "users" to decide how they can apply this in their setting (Britain and Liber 2004). Some of the main uses of learning technologies are illustrated in the Table 3 Applications of computer based tools.

Some of the features offered by VLEs include the functionality for communication. These are then broadly subdivided into synchronous and asynchronous interactions, which basically distinguish the speed of responses:

> *"A common distinction of multi-user electronic interaction that uses the time dimension is between synchronous – same time, e.g. online chat rooms, electronic class rooms, whiteboards, etc. – and asynchronous – different time, e.g. bulletin boards, discussion forums and electronic mail."* (Bell and Heinze 2004b:20)

Text-based synchronous interactions tend to be brief, they can provide instant feedback, and they permit follow up questions that can resolve misunderstandings. Asynchronous interactions allow for more leisurely composition and correction of postings, which is usually preserved as a discussion text during the period of the discussion. An example of asynchronous interaction is online discussion boards which are said to have the following benefits:

> *"1) Online discussion fosters student interaction. ... One consequence of the increased student interaction is a greater sense of teamwork and collaboration.; 2) Online discussion places learners in an active role. All students assume the active role not just those who are extroverted. ... ; 3) Online discussion forum can enhance the teacher-student relationships... ; 4) Online discussions encourage the use of higher thinking skills. ... ; 5) The final benefit of online discussion is the flexibility. ..."* (Yanes, Pena et al. 2005:29-30)

Applications of computer based tools and applications available within integrated websites, in terms of general categories of learning related purposes.	
Major Purpose	Applications that can be integrated with websites
1.Publication, Information dissemination	HTML Editors; Websites and the browsers to access them, web sites associated with database environments; software to facilitate file transfer and document attachment to email; tools for cross application format retention (e.g. pdf.)
2. Communication	Email systems, computer conferencing tools, including web boards and other forms of web-based conferencing; websites including communication options including mailto: for the direct sending of email and CGI (common gateway interface) forms for structured communication; software for Internet telephony, software environments for audio/video desktop conferencing, for voice email, for creating video attachments for Email; software systems for text based chat.
3. Collaboration	Groupware, which includes application sharing software, shared workspaces, web-based shared workspaces, Web based application sharing; workflow tools; computer conferencing suits; Websites designed for collaboration support; tools to allow collaborative writing on documents that are then commonly available to a group
4. Information and resource handling	Web based search engines, distributed database systems (Web and proprietary), Websites designed for information organisation, access and sometimes creation; tools to retrieve and display distributed multimedia resources stored as digital audio and video (including streaming audio and video)
5. Specific for teaching and learning purposes	Applets for interactive software (such as tutorials, quizzes, simulations) accessible via websites; testing systems accessible via websites; video capture tools for lecture or presentation capture; video conferencing (point-to-point and multicasting) for lecture participation; video on demand and streaming video for lecture capture and reuse; Web based course support environments; database generated course support systems, integrating many or all of the applications in this table along with management tools.

Table 3 Applications of computer based tools adapted after Collis (Collis and Moonen 2001:19).

Parallel to the development of VLEs that offer infrastructure and a number of communication tools within them, technological advances have also been made in the use of learning objects (Conole 2002). Learning objects are developed to actively engage the learner with online media (McGreal 2004) and are defined by the Learning Technology Standards Committee as follows:

> *"Learning Objects are defined here as any entity, digital or non-digital, which can be used, re-used or referenced during technology supported learning. Examples of technology supported learning include computer-based training systems, interactive learning environments, intelligent computer-aided instruction systems, distance learning systems, and collaborative learning environments."* (IEEE Learning Technology Standards Committee 2005: online)

There are several commercial organisations that specialise in production of pre-packaged learning objects; one example of such products is SkillSoft (www.skillsoft.com) (Snyder 2003). The learning objects have a number of advantages such as the potential of reducing the cost of development, and infinite re-use. However, perhaps due to their novelty, they possess a number of limitations such as low scalability and limited adaptability (Parrish 2006). So far this sub-section has examined technology and how it can be used to facilitate blended learning. We will now examine a theory, the 5 Stage Model which allows us to structure the e-moderation process.

2.4.2 Technique for e-learning: e-moderation

One of the dominant techniques that focuses on practical advice on the use of online communication is the 5 Stage Model for e-moderation (Chowcat 2005; Moule 2007), [see Figure 8: 5 Stage Model, adapted after Salmon (2004: 29)]. This model is based on the action research work of an online class in the UK Open University and on experience of staff development research which focused on the issue of online communication (Salmon 2004:26).

This model of teaching and learning online describes a five-stage process required for engaging students with online communication technology. In the model, the level of engagement is indicated on the interactivity column by the darkness of the colour. For example, stage 4 Knowledge construction is the most interactive of all stages, indicated by the black colour (the amount of interactivity measure on the interactivity column). The development starts from stage 1 and progresses up to stage 5 indicated by the arrowed line on the left hand side of the model. Each of the stages is subdivided into two triangles representing the roles of the e-moderator and the technical support staff. These roles vary in each stage.

5 Stage Model

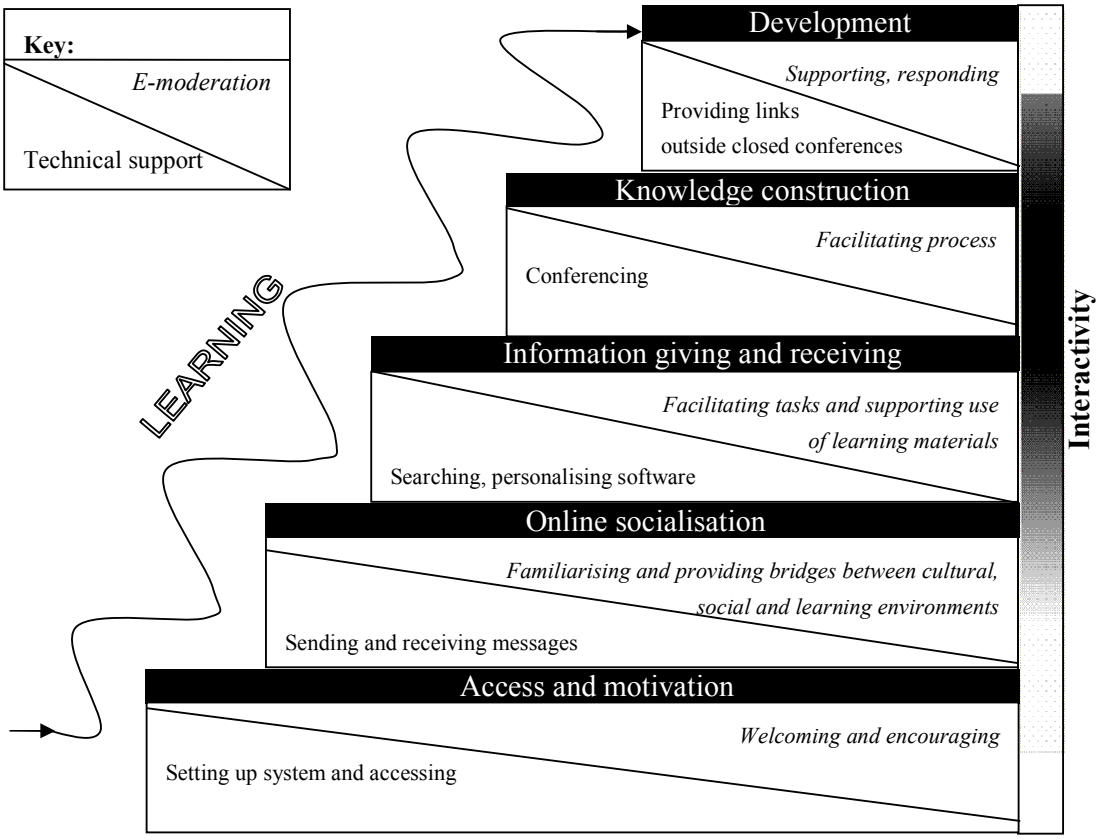

Figure 8: 5 Stage Model, adapted after Salmon (2004: 29)

The first stage of the model is concerned with accessing the learning system, when students are issued with access information by the technical support and welcomed by the e-moderator. The second stage focuses on online socialisation of the students on the course; they are encouraged to familiarise themselves with the environment and socialise with other learners. The information exchange stage puts more emphasis on interaction and engages students with the learning materials. The final two stages are where the students should already be familiar with their environment and thus are able to proceed with knowledge construction and development.

The model is based on a sequential principle that there are certain steps that have to be mastered before higher level steps can be undertaken. The underlying principle is to use activities to make students interact with each other and the e-moderator, rather than simply and passively accessing information such as handouts and presentation material. Being able to

learn the use of communication technology such as email and discussion boards requires certain skills, the presence of which cannot simply be assumed.

This 5 Stage Model has resonances with thinking about group work, particularly, the working stages such as 1) forming 2) storming 3) norming 4) performing and 5) adjourning (Tuckman and Jensen 1977). These similarities are particularly visible in the interactivity scale of the 5 Stage Model. The 5 Stage Model indicates that the interactivity is reduced at the final stage as it is the case with group working stages of Tuckman and Jensen. The purpose of the 5 Stage Model is to address online communication and group work within constructivist pedagogy (Salmon 2004). This highlights some of the main benefits of the model such as simplicity (Moule 2007), grounded in practice, reflects constructivist pedagogy, clarity, and provision of a good navigation tool for facilitators (Chowcat 2005).

However, there are also some disadvantages in the 5 Stage Model such as the exclusion of other pedagogies and e-learning approaches (Moule 2007:38). The model prescribes a course structure, ignores rhythms of participation, isolates e-learning from other learning and finally it is not a model for e-learning per se (Chowcat 2005). Additionally, the model has been criticised for its linear approach and its prescriptive nature - one week allocated to each stage, lack of flexibility to accommodate new ideas, difficulty of catching up for those who have fallen behind, and finally, does not take into account individual learning styles (Lisewski and Joyce 2003:5). Further limitations apparent in rigid application of the 5 Stage Model are also visible in the programmes where the first stage took place in a face-to-face setting, hence reducing the interaction at the second stage of the model (Jones and Peachey 2005). These limitations caution the use of rigid application of the 5 Stage Model and call for critical adoption that takes into account the context of application, rather than its simple use as a template for e-moderation.

2.5 Summary

In this Chapter a literature review has been presented, which has focussed on the three main themes of this work, the first being concerned with the pedagogic developments, the second with the concept of blended learning and the third with the pragmatic implications of blended learning.

The historic pedagogic developments highlighted the ongoing debate between advocates of teaching and those of learning. The recent literature suggests a paradigm shift within higher education in the UK, which supports constructivist approaches (Cullen, Hadjivassiliou et al. 2002), suggesting that the learning arguments are supported. One particular interpretation of constructivism is offered in conversational methods, which emphasise the interactive dialogue between the learner and the teacher. The three key theories discussed are Conversation Theory, Learning Conversation and Conversational Framework.

The discussion of the concept of blended learning has been highlighted. The multitude of interpretations and consequent implications in practice has been discussed. The benefit of this potential confusion is that it can be used to argue for a local understanding of the term based on the literature review. A preliminary definition, which emphasises the media of delivery but takes on board the need to accommodate improved learning and its facilitation, has been adopted for this work.

There are a number of technological developments such as print, radio, television and more recently networked computers that have impacted on learning and teaching practice. Computer assisted learning is enabled through technologies such as feature-rich Virtual Learning Environments, synchronous and asynchronous communication tools and learning objects technologies. The theoretical developments include the 5 Stage Model (Salmon 2004), which provides a concept for e-moderation. This model uses online communication to facilitate learning.

The next Chapter will draw on the research design literature, which examines philosophical beliefs, research methods and research tool decisions.

Chapter 3 Research design

3.1 Introduction

The previous Chapter outlined some of the main contextual developments of blended learning and how blended learning could be used to deliver a programme. The literature examined was concerned with pedagogic developments, the concepts, and the practical implications of blended learning.

This Chapter is concerned with research design, as highlighted in Figure 9: Conceptual framework: Chapter 3. Researchers are tempted to use the same set of 'tools' and are therefore likely to miss out on new knowledge opportunities (Hirschheim 1985:2). This Chapter examines several research 'tools' acceptable in Information Systems Research and addresses the issue raised by Rudy Hirschheim:

> *"For she/he who has but one tool, the hammer, the whole world looks like a nail"* (Hirschheim 1985:2)

Hirschheim advocates that emphasis be placed on the design of research tools rather than on the simple use of existing tools. The research design process should be influenced by philosophical beliefs, given research settings and not least, the research question; off the shelf research tools are often not adequate to the task.

Prior to philosophical discussion, it is important to note, that there is generally no one 'ideal' view of philosophy and this Chapter does not claim superiority of one view over another. 'Acceptable' philosophical paradigms are context related and therefore, keeping in mind the Information Systems context of this work, a brief introduction to the information systems discipline is required.

The emphasis within information systems research is on the use of information technology in social settings. The following is the adapted definition of Information Systems (IS) used in this thesis:

> *"The effective design, delivery, use and impact of information technology in organisations and society"* (Avison and Fitzgerald 1997: xix)

Information Systems encompasses a variety of disciplines and can be regarded as a subject in its own right (Avison and Fitzgerald 1997). The social needs of Information Systems have prompted an increased interest in 'soft' methodological approaches rather than technical developments (Probert 2002). Information technologies, as highlighted in the introduction Chapter of this thesis, have become a common standard for teaching in higher education. The increased use of ICT highlights issues such as the effective use of information technology for delivering teaching and learning (Alavi and Leidner 2001:2-3). The uptake of technology mediated learning prompts a need for information systems research that draws on two disciplines: education and information systems (Ibid.: 2-3). This thesis responds to this interdisciplinary need. However, the reader is reminded that the philosophy and method adaptation in this thesis tends to gravitate towards existing work in information systems.

The two research domains, those of information systems research and education research have a common social science background (Mahmood 2005:65), making the findings of this work relevant to both. Although this research is interdisciplinary, the underlying philosophical principles unite the two domains, and provide a coherent structure for a contribution to knowledge.

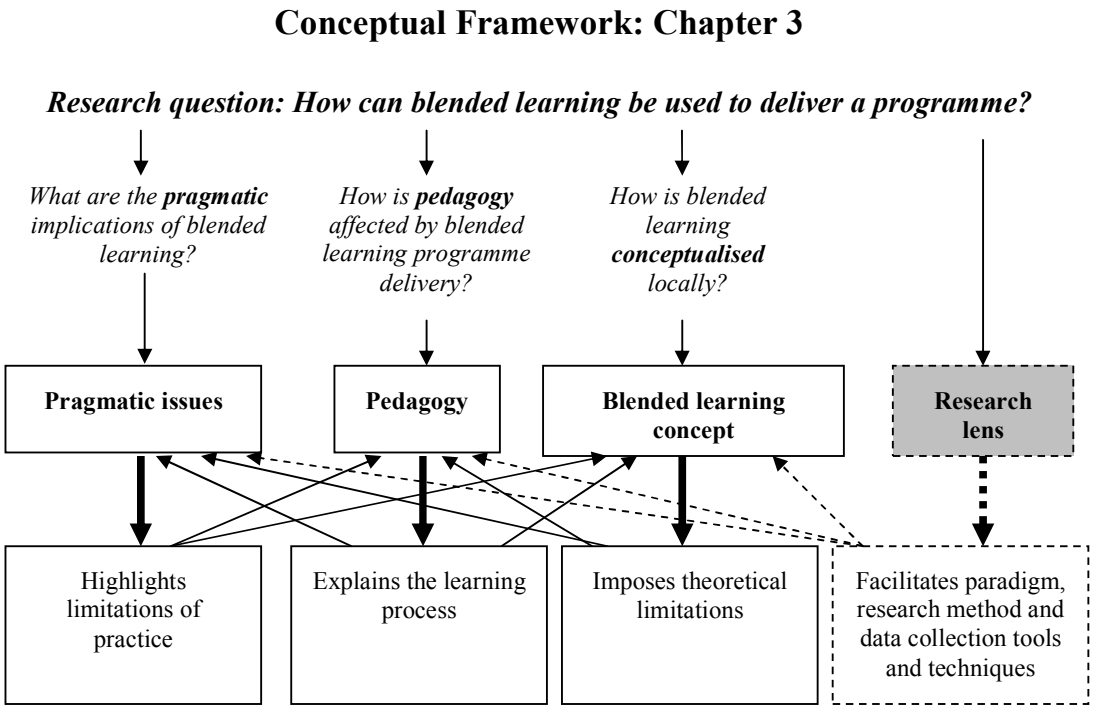

Figure 9: Conceptual framework: Chapter 3

This Chapter has the following structure: Firstly, considerations will be made regarding the underlying philosophical assumptions, which focus on Chua's classification (Chua 1986), a widely accepted classification in information systems research (Klein and Myers 1999). The classification will be used to structure an examination of beliefs about knowledge, physical and social reality, and the relationship between theory and practice. The three paradigms – positivist, interpretive and critical, and their application in the current research situation will be discussed. The interpretive paradigm will be adopted for this work and its justification argued. This will lead to the selection of an appropriate research method, resulting in action research. Justification for the selection of action research will be set out. Further, a detailed examination of action research will be made focusing on its characteristics and limitations. Finally, options for data collection will be examined and decisions documented.

3.2 Research paradigm considerations

There is a multitude of 'accepted' research paradigms in information systems (Probert 2004). It is therefore important to explicitly state the chosen paradigm option (Lau 1997). The first main section of this Chapter focuses on this point. The terms 'world-view' and 'paradigm' are

used in this work to mean broad philosophical beliefs, which are based on a number of assumptions about knowledge, physical and social reality and the relationship between theory and practice. This interpretation is in line with the work of Chua (1986). Generally, information systems researchers differentiate between three paradigmatic alternatives: positivist, interpretive and critical (Klein and Myers 1999; Oates 2006; Orlikowski and Baroudi 1991). A historical overview of the paradigmatic developments can be found in the works of Chua, Hirschheim, Oates and Silverman (Chua 1986; Hirschheim 1985; Oates 2006; Silverman 1998).

This differentiation between positivist, interpretive and critical paradigms as proposed by Chua has been utilised and scrutinised by a number of eminent IS researchers (Klein and Myers 1999; Oates 2006; Orlikowski and Baroudi 1991). Table 4: Chua's classification of paradigmatic assumptions provides a summary of issues that determine a researcher's paradigm. The following three components will be briefly outlined:

A Classification of Assumptions
A. Beliefs About Knowledge
Epistemological
Methodological
B. Beliefs About Physical and Social Reality
Ontological
Human Intention and Rationality
Societal Order/Conflict
C. Relationship Between Theory and Practice

Table 4: Chua's classification of paradigmatic assumptions (Chua 1986: 605)

A. Beliefs about Knowledge

The first set of assumptions is concerned with beliefs of knowledge. These beliefs of knowledge are twofold – epistemological and methodological (see Table 4: Chua's classification of paradigmatic assumptions). The epistemological assumptions specify criteria of 'what is considered to be true' and 'how it can be proven' (Chua 1986:604). The methodological assumptions influence decisions about acceptable methods that can be followed to acquire knowledge. Collecting evidence, for example, a survey of an appropriate

size that complies with statistical guidelines, can be considered as appropriate for positivist research methods (Ibid.: 604). Assumptions on epistemological beliefs dictate the choice of methodology. Epistemological and methodological assumptions are therefore interrelated and constitute beliefs about knowledge (Ibid.: 604).

B. Beliefs about Physical and Social Reality

The second set of assumptions is concerned with the 'object' of study. This set is concerned with assumptions on ontology, human purpose and social order (see Table 4: Chua's classification of paradigmatic assumptions (Chua 1986: 605). Ontological belief is concerned with the view of the nature of the empirical or 'real' world (Lee 2004:5) and its relationship to concepts describing it. The 'objective' ontological assumption states that the empirical world is independent of the researcher; the 'subjective' assumption, on the other hand, states that the world is dependent on human interpretation of it (Orlikowski and Baroudi 1991:7). Human intention and rationality is concerned with the purpose of knowledge and its alignment with human objectives. For example economists and accountants assume the human need for information which results in constructs such as 'desires information about future dividends and cash flow' (Chua 1986: 603). Social order/conflict issues outline the 'positive' or 'negative' assumptions about society and its development. For example, positivists assume a stable society and organisations, and that conflict can be controlled. In contrast, critical researchers adopt the negative assumption that conflict is common and there is injustice in the world.

C. Relationship between Theory and Practice

The final section of assumptions is concerned with beliefs regarding the contribution of theory to the real world. The question that researchers have to answer is:

> *"What is the purpose of knowledge in the world of practice?"* (Chua 1986: 605)

A researcher has to determine what objectives the outcomes of the research are likely to fulfil. Examples of these could be 'solving a technical question' or 'anticipating improvement of a social situation'.

The classification of the assumptions given above is useful in the discussion of paradigms. The purpose of the following is to discuss the three paradigms for the current research and justify the chosen option.

3.2.1 Positivist paradigm

The oldest and therefore the most refined paradigm is positivism, sometimes referred to as 'scientific research' as opposed to 'social research'. The two main characteristics of positivism are assumptions that the world is ordered and that it can be studied objectively (Oates 2006:283). These characteristics of positivism are also adopted in information systems research as outlined in the following quote:

> *"… IS research can be classified as positivist if there is evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and the drawing of inferences about phenomenon from a representative sample to a stated population (Orlikowski and Baroudi 1991)…."* (Klein and Myers 1999: 69)

Positivism can be traced back to the ancient times of Plato; however, the main developments took place in 18th century Western Europe, for example during the time of the French Revolution, and the times of Enlightenment with mottos such as 'dare to know' assuming that human logic can rule – thus empowering scientists. Since then some aspects of positivism have developed in western cultures to such an extent that they are almost equated with 'common sense' and are embedded in legal systems. As such, positivism is therefore the most common philosophical position in the English speaking West (Johnson and Duberley 2000).

Ontologically, the researcher is assumed as being objective and detached from the objects of research; this owes much to the thinking behind scientific research. Epistemologically, at the heart of the positivist assumption is the belief that it is possible to collect objective data, which represents the real world. Methodological assumptions of positivism rest on reductionism, repeatability and refutation of the main techniques of the positivist paradigm (Oates 2006:285).

The positivist beliefs regarding knowledge are hypothetic-deductive, meaning that a theory is formed and then using evidence, it is either rejected or accepted. The expression of empirical testability is twofold:

> *"(a) in the positivist's belief that there exists a theory-independent set of observation statements that could be used to confirm or verify the truth of a theory (Hempel 1966), and (b) in the Popperian argument that because observation statements are theory-dependent and fallible, scientific theories cannot be proven but may be falsified (Popper 1972)…."* (Chua 1986: 607)

In other words, the positivist belief is that a number of different experiments confirming the same results produce knowledge that can be generalised and therefore applied in other settings. For example in the case of gravity on planet earth: we can rely on gravity always being present so that we can measure it and predict the outcomes of experiments on it. However, the generalisation aspect of some research is not always desirable since it is the uniqueness of a situation that might be of interest (Oates 2006:288).

3.2.2 Interpretive paradigm

A brief historical background for interpretivism and its relationship to IS research is given below. As described above, positivism was a great lever for early researchers who were interested in the natural sciences. On the other hand, the interpretive paradigm originated in the social sciences. This arose in great part from the limitations of positivism when dealing with people and capturing their social beliefs, such as 'Does a person believe that a glass is half full or half empty?' (Oates 2006:289). This highlights some of the difficulties with the ontological characteristics of positivism such as reductionism, repeatability and refutation when dealing with the social interactions of humans and their interpretations of the world. Positivism was the first recognised paradigm and its ontological characteristics were associated with great successes in the natural sciences. Every subsequent paradigm has tried to address the limitations of these same ontological characteristics when dealing with many aspects of the social sciences and hence has been broadly regarded as anti- positivist (Johnson and Duberley 2000: 78). This results in such paradigms continually having to explain themselves vis-à-vis the positive paradigm. When considering the interpretative paradigm from an IS perspective, the following can be observed:

> *"IS research can be classified as interpretive if it is assumed that our knowledge of reality is gained only through social constructions such as language, consciousness, shared meanings, documents, tools, and other artefacts. Interpretive research does not predefine dependent and independent variables, but focuses on the complexity of human sense making as the situation emerges (Kaplan and Maxwell 1994) it attempts to understand phenomena through the means that people assign to them …(Orlikowski and Baroudi 1991). Interpretive methods of research in IS are ' aimed at producing*

> *an understanding of the context of the information systems, and the process whereby the information system influences and is influenced by the context' (Walsham 1993, pp.4-5)."* (Klein and Myers 1999: 69)

Ontologically, interpretivists aim to document a setting by identifying, exploring and explaining the relationships and dependencies of different themes. This subjective interpretation results in a methodological assumption that relies on a rich description of actors studied in their everyday lives. Interpretives assume that reality cannot be studied without social actors involved – these include both the subjects and the researcher (Orlikowski and Baroudi 1991; Walsham 1993; Walsham 1995):

> *"In this view, value-free data cannot be obtained, since the enquirer uses his or her preconceptions in order to guide the process of enquiry, and furthermore the researcher interacts with the human subjects of the enquiry, changing the perceptions of both parties. Interpretivism contrasts with positivism, where it is assumed that the "objective" data collected by the researcher can be used to test prior hypotheses or theories."*(Walsham 1995:376)

The characteristics of interpretive research include: multiple subjective realities; dynamic socially constructed meaning; researcher reflexivity; study of people in their natural settings and multiple interpretations (Oates 2006:293). The issue of subjective realities relates to the fact that reality is something that is perceived by people, meaning that the same situation might be perceived differently depending on who provides the account of it. Dynamic socially constructed meaning emphasises the group interpretation of a certain event and is communicated via social constructions such as language, which vary between groups and change over time. Reflexive work is required, since all interpretations are tainted by the researchers' subjective perceptions and opinions, which have to be stated since they will have an effect on the research process and its interpretations. The study of people should be in natural settings instead of laboratories so that a maximum level of real life complexity can be gained. Instead of reaching one conclusion, as would be the case with much positivist work, interpretivists examine multiple interpretations and pay particular attention to the ones that appear to be the most convincing.

3.2.3 Critical paradigm

Having examined the positivist and interpretive paradigms, we will look briefly at the third paradigm – critical. When considering the critical paradigm from an IS perspective the following can be observed:

> *"IS research can be classified as critical if the main task can be seen as being one of social critique, whereby the restrictive and alienating conditions of the status quo are brought to light. Critical research seeks to be emancipatory in that it aims to help eliminate the causes of unwarranted alienation and domination and thereby enhance the opportunities for realizing human potential (Alvesson and Willmott 1992; Hirschheim and Klein 1994). To make this possible, critical theorists assume that people can consciously act to change their social and economic conditions. They do, however, recognize that human ability to improve their conditions is constrained by various forms of social, cultural, and political domination as well as natural laws and resource limitations…."* (Klein and Myers 1999: 69)

Therefore, similar to interpretivism, the critical paradigm contradicts the positivist approach and builds on the epistemological assumption that social reality is shaped by people. But unlike the interpretive approach, that places great emphasis on subjectivity, the critical paradigm advocates that there are also objective aspects that influence our perceptions. These are political, economic and cultural powers; the analysis of which is perceived as important to provide justifiable ways for considering the ontological assumption of the world (Oates 2006:296).

The methodological assumptions of the critical paradigm are similar to the interpretive paradigm. However, there are three main criticisms that critical researchers have of the interpretive paradigm as outlined by Chua (1986): Firstly, the level of actor agreement when producing rationalization of findings is perceived as fragile. There is no attempt to account for underlying differences between researchers and other actors. Secondly, interpretive work lacks an evaluative element due to absence of attention towards power. Thirdly, in the assumptions of physical and social reality, interpretivists assume social order and control with interpretive methods. Therefore the focus is on the micro-social interaction, which tends to neglect the main conflicts in power relationships. These limitations of interpretivism have inspired a number of critical philosophers. Critical theory is predominantly used with reference to the Frankfurt School, based on the work of Max Horkheimer, Theodor Adorno, Jurgen Habermas and Herbert Marcuse (Johnson and Duberley 2000).

A unique feature of the critical paradigm is the particular attention to evaluation. Self-consciousness in the critical paradigm is utilised unlike in the other two paradigms. Here, the reality is scrutinised with the objective of evaluation and the exposure of discrepancies and conflicts (Orlikowski and Baroudi 1991).

3.2.4 Paradigm choice

So far this section has outlined some of the main principles surrounding the three paradigms and the resulting differences in their characteristics. This sub-section is concerned with the choice of paradigm to use as the analytical framework for the current research. This matter is approached with an open mind, since there is no one paradigm that is superior (Mahmood 2005:57), and there are also options for multi-paradigm research projects (Mingers 2001:240). The decision on the paradigm selection is usually based on the given research questions, the research context, the tradition of the discipline and the researcher's willingness to take a risk and challenge traditional beliefs both of the discipline and the researcher (Oates 2006:304).

The adopted research questions in the current work are mainly concerned with *How* certain events took place. This leads to multiple explanations. This does not favour a good positivist epistemological position, which assumes that there should be one generalisable explanation of truth. The critical and the interpretive epistemological positions are appropriate. However, on the level of relationship between theory and practice there emerges a misalignment with this research and the critical paradigm; there is no interest in the challenging of power structures. This leaves the interpretive paradigm as the most appropriate option since the posed research question aims to explore blended learning. The advantages of interpretivism extend to the research context, which is essentially a social interaction with a number of different actors, all of which have their own interpretations of the 'reality'. A positivist approach to this domain is possible but would not be able to provide the desired richness of explanations and messiness of this real life situation.

Some positivist research proponents fail to accept the validity of other research paradigms (Orlikowski and Baroudi 1991). However, interpretive work has become more popular with time (Walsham 2006:320) as is evident in European journal publications (Mingers 2003). In relation to the research tradition in IS research, the two dominant options are interpretive and positivist research, with critical research being also increasingly accepted [(Mahmood

2005:57);(Oates 2006:304)]. Because of their acceptance, this point does not add value to the decision on paradigm choice for this work. However, the author's beliefs that have been shaped through the literature review, research process and the doctoral school attendance make a major difference. When starting this research, the author's worldview tended towards the belief that it is possible to find one right solution to any problem – since ontologically he subscribed to the belief of an objective world (positivist paradigm). However, in the initial stages of this research and exposure to literature surrounding paradigmatic issues, this world-view has changed. Social reality and a multitude of "truths" prompted the thought that the current situation is subjective and dependent on individuals. The author's beliefs are influenced by the interpretive standpoint which is therefore adapted for this work. This can be seen in the paradigm comparison table (see: Table 5), the author's philosophical beliefs about this research are in line with the interpretive paradigm.

Chua's original ideas are based on the accounting discipline. Due to similarities of developments outlined above and the acceptance of Chua's work in information systems, it is assumed that on a philosophical level the accounting discipline is similar to that of information systems. This allows us to build on Chua's views and modify these to the main paradigmatic characteristics for information systems research.

Paradigm / Assumptions	**Positivist**	**Interpretive**	**Critical**	***This research***
A. Beliefs about knowledge				
Epistemological *(nature of the researcher - research relationship)*	Theory is separate from observation that may be used to verify of falsify a theory. Hypothetico-deductive account of scientific explanation accepted.	Scientific explanation of human intention sought. Their adequacy is assessed via the criteria of logical consistency, subjective interpretations, and agreement with actors' common-sense interpretation.	Criteria for judging theories are temporal and context-bound.	*Researcher believes in subjective reality and actor's common sense interpretations.*
Methodological *(How can the enquirer find out)*	Quantitative methods of data analysis and collection which allow for generalisation favoured.	Ethnographic work, case studies, and participant observation encouraged.	Historical, ethnographic research and case studies more commonly used.	*Subscribes to pragmatist beliefs of real life participant observation*
B. Beliefs about physical and social reality				
Ontological: *(Form of nature and reality)*	Empirical reality is objective and external to the subject. Human beings are also characterised as passive objects; not seen as makers of social reality.	Social reality is emergent, subjectively created, and objectified through human interaction.	Human beings have inner potentialities, which are alienated (prevented from full emergence) through restrictive mechanisms.	*Human interaction is essential to understand social reality*
Human Intention and Rationality	Single goal of utility-maximisation assumed for individuals and firms. Means-ends rationality assumed.	All actions have meaning and intention that are retrospectively endowed and that are grounded in social and historical practices.	Human intention, rationality, and agency are accepted, but this is critically analysed given a belief in false consciousness and ideology.	*Reflexive examination of actions and social practices.*
Societal Order/Conflict	Societies and organisations are essentially stable; "dysfunctional" conflict may be managed through the design of appropriate *information systems* control.	Social order assumed. Conflict mediated through common schemes of social meanings.	Fundamental conflict is endemic to society. Conflict arises because of injustice and ideology in the social, economic, and political domains, which obscure the creative dimension in people.	*Assumes social order*
C. Relationship between theory and practice				
	Information systems specify means, not ends. Acceptance of extant institutional structures.	Theory seeks only to explain action and to understand how social order is produced and reproduced.	Theory has a critical imperative: the identification and removal of domination and ideological practices.	*Aims to gain explanations of the situation studied*

Table 5: Paradigm comparison table adapted after Chua (1986). Original work modifications are italicised.

3.3 Research method considerations

Having discussed the philosophical foundation of this work, which is established to be of the interpretive paradigm, we will now focus on the selected research method. It is important to clarify the terminology used in association with research method, particularly since in the field of information systems 'method' is often assumed to have the same meaning as 'methodology' (Venters 2003:100). A number of terms are used to refer to research method – 'research approach' (Galliers 1992), 'research strategy' (Hughes and Howcroft 2000; Oates 2006) and sometimes 'methodology' (Cornford and Smithson 1996). To avoid confusion the term method is adopted for this work and is deemed to mean:

> *"Way of doing something, system of procedure, conscious regularity, orderliness"* (Fowler and Fowler 1972)

The term methodology is assumed to refer to the general 'study of methods' (OED 2004). The two terms are related but when referring to methodology the abstraction level is higher than in the term method. Thus methodology is primarily concerned with the theoretical underpinnings of a method (Venters 2003:100).

This section is divided into three sub-sections. The first sub-section will outline research method considerations and discuss some of the main possibilities for the current work. One option will be selected and the variations of this option will be discussed in detail in the second sub-section. The final sub-section will identify the main characteristics of the research method and translate these to the given research setting.

3.3.1 Research method choice

There are no exclusive choices for research method (Probert 1997; Venters 2003). The following are some of the options in interpretive information systems research: design and creation, experiments, surveys, ethnographies, case studies and action research (Oates 2006). In the following each of these methods will be explored in relation to the given research questions.

The Design and Creation method, unlike the other methods, involves development of a software artefact or a software development method, neither of these is applicable to the current research and therefore this option is dismissed.

The causal relationships between variables and hypothesis testing are some of the main characteristics of experiments (Kaplan and Duchon 1988). Usually relying on the use of quantitative data and statistical methods, experiments aim to create generalisation and devise laws or theories (Oates 2006). Repeating an experiment and ruling out any flux within the data is an important part of experiment design and execution. Experiments are usually carried out in controlled environments such as laboratories where the intervention effects can be certain to stem from specific changes (Kaplan and Duchon 1988). In the current work, experiments are rejected because of the social complexity of the given research setting; and because we are dealing with social phenomena, group dynamics, culture etc which are difficult to control. It would not be possible to state exactly which variable caused which effect. This would be difficult to replicate situations, since student groups are different and staff, lecture rooms and the actual Virtual Learning Environments are subject to change.

Survey research, unlike experiments, is not able to confirm the cause and effect of variables, but rather suggests a general association between them (Oates 2006). Relying on statistics, researchers would select a representative data sample which would allow the testing of a hypothesis (Stycos 1981). Similar to experiments, surveys are also aiming to establish generalisation, usually relying on the positivist paradigm (Oates 2006). Although an interpretive survey lends itself to this research, a survey would not be able to provide an opportunity for intervention to improve the programme and see if the improvement has materialised. Surveys were therefore not considered appropriate in the current research.

Ethnography, unlike experiments and surveys, is generally utilised in the interpretive paradigm, and to some extent in the critical paradigm (Miles and Huberman 1994; Oates 2006). Concerned primarily with the understanding of culture and the different interpretations that people have of the same situations, ethnographers rely on ‘thick descriptions’ of situations and also declare their own influence on the situation (Goulding 2005). However, the ethnographers influence on a situation is essentially passive; they do not intervene with the intention of realising some goal (Mahmood 2005). This would not fit in with the current research, since pragmatic issues of programme improvement is an underlying theme.

From an interpretive standpoint, case studies would provide a 'rich description' of the given situation, offering a snapshot of the events at a given point of time, with the declarations of the researchers and their various interpretations of events (Kaplan and Duchon 1988; Mahmood 2005; Pare 2004; Yin 1994). Using an interpretive case study for the given research, would make it possible to provide a rich description of the blended learning phenomenon. The drawback of an interpretive case study is similar to that of the ethnographic method, i.e., active intervention from the researcher is not permitted (Mahmood 2005; Yin 1994). This makes the case study method less than ideal in the present situation.

Action research, like the case study method, can be undertaken in the above discussed philosophical paradigms: positivist (Clark 1972), critical (Carr and Kemmis 1986) and interpretive (Elden and Chisholm 1993). On the other hand, several research publications do not recognise action research as one of the research method options (Hakim 2000; Williams and May 1996) since it lends itself to specific fields and therefore is not as popular as, for example, the use of case studies. Action research, unlike a case study, allows for the creation of change whilst simultaneously studying the effects (Avison, Baskerville et al. 2001; Miles and Huberman 1994). From the interpretive point of view, action research would be undertaken in an iterative manner eliciting interpretations of co-researchers, identifying improvements and trying to implement these in practice (Mahmood 2005). Continuously evaluating the intervention and the associated interpretations allows for a better understanding of the situation from different points of view (Miles and Huberman 1994). One of the main advantages of action research compared to other research methods, i.e. case study or experiment, is that it accepts that knowledge doesn't exist in a vacuum but has to be applied in practice, and only then can the benefits of it be fully understood (Baskerville and Myers 2004). Action research thus appears as an appropriate method for the given research questions. It fits with the researcher's interpretive philosophical beliefs and offers the opportunity for active intervention.

3.3.2 Action research variations

This sub-section will firstly focus on the historic roots of action research, starting from the early work of Kurt Lewin (1890- 1947). It will progress to contemporary information systems research. Like other methods, action research is constantly undergoing improvements and modifications, which result in numerous definitions and interpretations of what is considered to be 'valid' or recognised action research. Having discussed action research variations, the

appropriate action research interpretation is selected and its strengths and weaknesses appraised.

The term action research is generally attributed to the work in the United States of America (USA) by social psychologist Kurt Lewin (1890- 1947) in the 1940's (Lau 1997; Waterson 2001). Lewin's work was on group dynamics and a combination of social theories and practice (Lewin 1974). Independent developments of action research in the UK were made by the Tavistock Institute (formerly Tavistock Clinic) after the Second World War (Baskerville and Myers 2004:330). Action research streams developed within three different scientific disciplines: the education stream, focusing on teaching and learning; the community improvement stream, investigating deprived minorities; and the organisation stream, looking into the development of organisations (Baskerville and Myers 2004; Lau 1997).

Action research provides a framework of continuous improvement which is characteristic with new systems development and provides a means of generating and validating social theory (Avison, Lau et al. 1999; Baskerville 1999; Mumford 2001). Theories developed using action research can be continuously updated, emphasising that they are guidelines rather than rules (Avison, Lau et al. 1999:95). Action research is one of the methods that has helped the shift from dominant positivist paradigms within the IS research field over the last quarter of the 20th century (Lau 1997).

In the last decade, several journals have had special issues contributing to the action research discussion. These journals include the Journal of Information Technology & People 14(1) in 2001 and in the 2004 Management Information Systems Quarterly. Good Information Systems research has to be relevant to practice; this is said to be offered by action research (Avison, Lau et al. 1999; Baskerville and Myers 2004):

> *"Action research is one of the few valid research approaches that we can legitimately employ to study the effects of specific alterations in information systems development methodologies in human organisations"* (Baskerville and Myers 2004:229)

Educational research, similarly to information systems research, recognises action research as a popular research method. However, unlike in information systems, educational action research is well established. This is evident in entire journals dedicated to educational action research publications. For example, in the Educational Action Research Journal, which has

been published since 1992 (Taylor and Francis Group 2007). Despite the long tradition of educational action research, there are still debates that surround evaluation of action research studies (Heikkinen, Huttunen et al. 2007). The commonality between information systems and educational action research is that both disciplines stipulate the need for transparency in the work carried out (Baskerville and Myers 2004; Heikkinen, Huttunen et al. 2007). The dimension of professional development is an important motivating factor for educational action research; one particular form of this is action learning. Action learning is predominantly based on the self-reflection of academics and their continuous process of professional development (Zuber-Skerritt 1990; Zuber-Skerritt 1996). Action research is perceived as the most effective way of engaging academic staff in their continuous development in order to achieve improvement in the educational practice (Biggs 1999).

3.3.3 Information systems action research characteristics

In order to help finalise the decision on the research method to be used in the current work, this section discusses the main characteristics of action research, drawing on philosophical foundations and criticisms of action research highlighted by previous researchers. Having established an understanding of action research, a justification for its implementation is provided. The justification influences the way that action research will be implemented in this work.

There are a number of researchers who have attempted to capture the different variations of action research [for examples, see: (Avison, Lau et al. 1999; Baskerville 1999)]. These variations include: Canonical Action Research (Lindgren, Henfridsson et al. 2004); Collaborative Practice Research (Iversen, Mathiassen et al. 2004); Participatory Action Research (Street and Meister 2004; White, Greenwood et al. 1991); Action Science (Argyris, Putnam et al. 1985); Dialogical Action Research (Mårtensson and Lee 2004); Action Learning (Lau 1997) and Action Case (Vidgen and Braa 1997). These authors give different interpretations of action research. This adds to some confusion about the term ‘action research’ and may actually restrain the wider adoption of it (Avison, Lau et al. 1999). It is not the intention of this work to explore the different interpretations of action research, but rather to clarify the action research interpretation adopted for this work.

In order to simplify the varying views of key authors in the field of action research a table has been prepared (see: Table 6: Action research implications for this work). This table brings together: the tenets of action research as seen in Management Information Systems Quarterly (MISQ) special issue by Baskerville and Myers (2004); the action research characteristics as proposed by Oates (2006); the stages of Lewin's cycles for action research and the deduced implications for the current work.

Action research implications for this work			
Tenet (Baskerville and Myers 2004:331)	Action research **characteristic** (Oates 2006:155)	Stages of **Lewin's cycle** (Burns 2000)	*Implications for **this research:***
III: "rational thought is interspersed with action"	An emphasis on change	(1) initial idea	*Need for improvement in practice*
I: "concepts are defined by their consequences"	Several data generation methods	(2) reconnaissance (5) monitoring	*Need for "open mindedness" in relation to data sources*
III: "logic of controlled inquiry"	Iterative cycle of plan – act - reflect	(3) plan	*Need for a plan of action and iteration*
II: "truth is embodied in practical outcome"	Concentration on practical issues	(4) implementation	*Need for real-world research settings*
IV: "human action is contextualized socially"	Collaboration with practitioners	(6) evaluation	*Need for participant observation and collaborative reflection*
II: "truth is embodied in practical outcome"	The research outcomes are practical and theoretical	(7) review of the plan	*Need for contribution to theory and practice*

Table 6: Action research implications for this work

The first column highlights the pragmatic philosophical tenets which underpin action research. These tenets are given in the following:

> *"The first premise is Peirce's tenet that all human concepts are defined by their consequences. The second is James' tenet that truth is embodied in practical outcomes. The third is Dewey's logic of controlled inquiry, in which rational thought is interspersed with action. The fourth premise is Mead's tenet that human action is contextualized socially, and human conceptualization is* ***also a social reflection****."* (Baskerville and Myers 2004:331)

These tenets serve as a philosophical grounding for action research and influence its characteristics. The second column illustrates the general characteristics, which emerged through the practice of action research. The third column maps out the seven - staged action research process as illustrated in Lewin's Cycle of action research [see Figure 10: Lewin's cyclic model, adapted after: (Burns 2000:445)].

Lewin's cyclic model

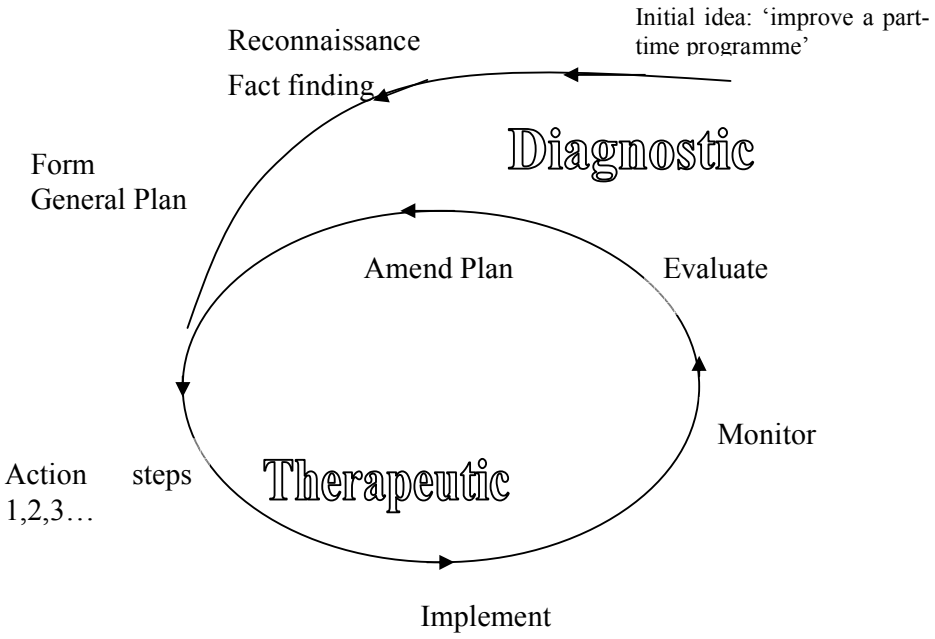

Figure 10: Lewin's cyclic model, adapted after: (Burns 2000:445)

The table simplifies the complexity surrounding philosophical relationships of pragmatism and action research characteristics. It does not suggest direct links within the table rows, but that there are similarities and inter-relationships of common themes. These themes influence

the author's conception of action research and translate into implications for research operationalization as highlighted in the fourth column of the table.

As outlined in Lewin's cyclic model, the action research process can be broadly broken down into two stages: the diagnostic and the therapeutic (Baskerville 1999:6). The former is concerned with general 'problem' identification and the latter with active improvement. The therapeutic stage iterations of fact finding, planning, implementing and evaluating enable the establishment of a local theory which informs practice. Whilst being one of the advantages of action research, this also poses a challenge. Contribution to both theory and practice is the 'double challenge' for action researchers and it is particularly difficult to achieve (Avison, Baskerville et al. 2001; McKay and Marshall 2001). Whilst both the theoretical and practical contributions of action research are desired, in reality this does not always materialise. However, action research can still be successful when either a theoretical or a practical contribution is achieved (Oates 2006:155).

The unbalanced emphasis on theoretical improvements or practical gains opens up another potential weakness: the difficulty of differentiation between research and consultancy (McKay and Marshall 2001). This results in the questioning of the scientific contribution to academic knowledge. Both action research and consultancy projects have the notion of situation improvement (Oates 2006:158). In particular, in situations where the balance of power is in the hands of the project clients/practitioners, action research is in danger of becoming consultancy (Avison, Baskerville et al. 2001:44). However, research requires more thorough documentation than consultancy (Avison, Lau et al. 1999:96); research aims for theoretical rationalization whereas consultancy is usually empirically grounded. Action research is cyclical but consultancy tends to be linear. Finally, consultants tend to have stricter deadlines and financial constraints (Baskerville and Wood-Harper 1996:241).

The conduct of research in real life settings involves multiple variables which are beyond researchers' control (Baskerville 1999) and therefore the learning process resulting from action research might not always follow the ideal path as illustrated in Lewin's cyclical model (Bate 2001). Based on the opportunistic, exploratory and emergent nature of action research it can be argued that the research process does not necessarily follow in Lewin's order (Bate 2001). Such thinking led to the development of a new 'model' for the learning process through action research this is given in Figure 11: Change with action research approach

adapted after: (Bate 2001). Several interconnections in this figure represent the 'open' or non-sequential research process, which is no longer a cyclical but has a 'star shape' representation. The interconnections are depicted by lines bringing together all areas involved in the learning process.

Change with action research approach

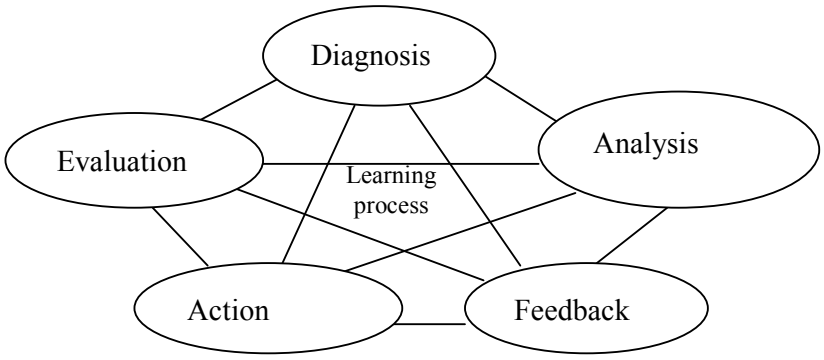

Figure 11: Change with action research approach adapted after: (Bate 2001)

Arguments about the sequence of activities in the real life element of action research leads to a more general and more serious criticism of action research. This is the feeling that action research lacks rigour. This alleged weakness is usually associated with the researcher's limited control of the whole process (Oates 2006:157). Limited control leads to limitations with regard to generalisation and validation, since each project is highly situational (Avison, Baskerville et al. 2001:43). It is therefore not possible to develop general 'laws' for action research implementation (Ibid.). However, as with other interpretive paradigms when applied to action research, generalisations are not the main focus of the work (Oates 2006:161).

It is easy to see why observers of action research might question its rigour; however, such questioning can be useful in developing guidelines for the method. Action researchers can pay lip service to the issue of participation whilst actually making all the decisions on their own (Oates 2006:159). Therefore there is a need to always work towards 'equal' levels of participation from all the collaborators in action research (Avison and Wood-Harper 1990:180). Conflicts between participants can impinge on action research success (Avison,

Lau et al. 1999:96). This highlights the need for the adoption of an ethical approach; everyone needs to know everyone's contribution is both valued and vital. When everyone knows their role there will be a reduction of the taken-for-granted elements of research; questioning a situation is a very important aspect of action research. It follows that the need for candour and being able to communicate openly is of great importance (Waterson 2001). Even when an ethical approach has been realised, action research still needs to be on-guard. For example, self-delusion is a possibility. This in action research is similar to that in other interpretive paradigm-based research methods in having the potential for biased research interpretations (McKay and Marshall 2001). These can be subconscious and therefore difficult to identify (Oates 2006:160). Unlike in other research methods there is also the possibility of group-think, where the whole group of actors, consciously or subconsciously, support one idea and therefore become blind to the reality (Ibid.:161). All of this points at the importance of collaboration:

> *"Action is socially relative, and this makes the action researcher a participant observer. Further, it explains why collaborative teams are essential. In order for action to be formulated in the social setting, the formulators must be socially situated in that setting. A collaborative team is necessary to provide the "others" who will invoke the responses in the reflective self. Otherwise, action is not rationalized or operationalized in the reality of the social world."* (Baskerville and Myers 2004:332-333)

Another criticism of action research – its apparent arbitrary duration - has its origin in the iterative nature of the research. This can be seen in Lewin's cyclic model, where there is no apparent end to the therapeutic stage and hence to the action research. Theoretically, action research iterations can be infinite (Kember 2000). From this a question arises: When does one share one's results? Is it at the end of the first iteration? The second?... For example in the case of the Multiview development framework, the framework resulting from an action research project, is itself continuously developing (Avison, Lau et al. 1999:95) and knowing when to share findings is not immediately apparent. All one really has to go on is practice. It is generally accepted that at least three iterations should be completed (Ibid.), but nothing prevents dissemination of findings after even one iteration.

Action research projects also have the issue of the time period over which they were conducted. One study suggests that these can range from three months to five years, with the majority of projects falling into periods of one to two years (Lau 1997). The concern here is what determines the duration. The answer to this question is tied up in the very nature of

action research, where the intention is improvement rather than the solving of a problem (Avison, Baskerville et al. 2001:43). Hence, once improvements are achieved, they can act as a guide for a project's duration.

Having considered the characteristics of action research, the following provides a summary of how action research is seen as shaping the current work:

> *"Action research simultaneously assists in practical problem-solving and expands scientific knowledge, as well as enhancing the competencies of the respective authors, being performed collaboratively in an immediate situation using data feedback in a cyclical process aiming at an increased understanding of a given social situation, primarily applicable for the* ***understanding of change process in social systems*** *and undertaken within a mutually acceptable ethical framework. (Hult and Lennung 1987)"* (Lau 1997: 34)

The decision on whether action research is the appropriate research method for this work is based on emergent needs as previously outlined in Table 6: Action research implications for this work. These implications guide the decision in Table 7: Action research appraisal for this research. As can be seen in a needs alignment (see Table 7: Action research appraisal for this research), the given research setting fits the characteristics of action research as identified in literature. However, there are a number of drawbacks with action research projects and therefore these will be examined separately in the next Chapter, which aims to outline the implementation.

Needs alignment of action research and given research problem	
Action research implications:	Is the need met in given research setting?
Need for improvement in practice	Yes, improvement of a part-time programme
Need for open mindedness in relation to data sources	Yes, observation, interviews and focus groups will be used
Need for a plan of actions and iteration	Yes, using academic publication outlets these will be published and reflected upon in the future
Need for real-world research settings	Yes, the programme is situated in the University of Salford
Need for participant observation and collaborative reflection	Yes, the course management team including lecturing staff, graduate teaching assistants and support staff are interested in being part of this process.
Need for contribution to theory and practice	Yes, lecturing staff on the course are also supervisors for the researcher and are willing to accommodate practical change. Need for theory contribution identified in literature.

Table 7: Action research appraisal for this research

3.4 Data considerations

So far, this Chapter has outlined the philosophical foundations for this work, which are grounded in the interpretive beliefs. This sets out the paradigm for this work, which together with the research question and research setting, informed the choice of the research method – which is action research. This section is concerned with the data that can and will be used in the current work. The section is therefore subdivided into two sections: Firstly, qualitative and quantitative data types are appraised. Secondly, the data sources - observation, focus group, and interviews - are appraised.

3.4.1 Data type

Action research tends to be labelled as qualitative research (Avison, Lau et al. 1999:94); (Avison, Baskerville et al. 2001:28). The pragmatic roots of action research imply the use of

participant observation as at least one of the data sources. However, observation can be of different types: it can be non-numeric, for example, providing descriptions of human behaviour; or numeric for example, providing the number of occurrences of certain events. This leads us to the basic differentiation between qualitative and quantitative data. The latter is primarily concerned with numbers and the former with words (Miles and Huberman 1994:1). Qualitative data

> *"…includes all non numeric data – words, images, sounds and so on – found in such things as interview tapes, researcher's diaries, company documents, websites and developers' models."* (Oates 2006:266)

A more elaborate differentiation between qualitative and quantitative data can be made in relation to their utilisation in a research method (Siegel and Dray 2003:2-4). This has been done in the form of a table which compares qualitative and quantitative data in the context of research characteristics and relates this to the imperatives of the current research (see Table 8: Data type considerations for the given research adapted after (Siegel and Dray 2003:2-4). Additions are italicised.

As depicted in the table, there are a number of characteristics that are associated with the two data types. Overall, it appears that the characteristics of qualitative data align more with the current research. Consequently, whilst numeric data is thought useful for descriptive purposes, such as the number of students on the course and the number of interviews held, it is not perceived as being as important as is, for example, the comments of individuals.

It appears that quantitative data lends itself in particular to the positivist philosophical paradigm (but can also be employed in interpretive and critical research) and is usually generated by experiments and surveys (Oates 2006:245). On the other hand, qualitative data is primarily used by interpretive and critical researchers (but also some positivists) (Oates 2006:266). These have the characteristics of ad hoc opportunistic method design, a small but strategically selected sample which allows for various interpretations offering 'how' and 'why' explanations. There has been a general increase in popularity of qualitative data amongst researchers towards the end of the last century (Miles and Huberman 1994:1-2).

Quantitative versus Qualitative			
	Quantitative	Qualitative	*This research*
Method, design	Predetermined	Ad hoc, opportunistic	*Ad hoc, opportunistic with limited level of predomination*
Sampling	Large, representative, Random	Small, strategic	*Small only one programme over two years is examined*
Data analysis	Standardized measures allow efficient data reduction Facilitates combining and comparing across cases	Volume of raw data overwhelming, often of unclear pertinence Data reduction not straight-forward Data not standardized across cases	*Interpretive data analysis, drawing on participants' beliefs.*
Evaluation of quality	Standards of quality exist, looks objective, degree of support for inferences open to scrutiny	Inferences can seem to come from "invisible" intuitions, hard to assess quality	*Quality is based on participants' interpretation and related academic publications*
Focus	Questions should be specified in advance based on theory Must be narrowed, sometimes ridiculously, to isolate variables, or it takes "black box" approach	Open to possibility you don't know the right questions to ask in advance Broad, holistic, explanatory, tries to grasp complex interactions of Factors	*Exploratory with some emphasis on actions being investigated in particular research cycle.*
Aimed at	Understanding "What?" Numerical Abstractions Characterizing the population	Understanding "How and why?" Realistic representations Characterizing the "Design Space"	*Research questions are focusing on understanding of "How?".*
Values	Statistical validity	Practical implications	*Pragmatist emphasis on theory supported by practice*

Table 8: Data type considerations for the given research adapted after (Siegel and Dray 2003:2-4). Additions are italicised.

3.4.2 Data sources

Several data collection sources can be used by action researchers (Oates 2006:155). These include: participant observation, document analysis, interviews, questionnaires, and log books and can be of qualitative or quantitative type (Miles and Huberman 1994:8). The following

sections will discuss in more detail what is meant by the observations, focus groups and interviews in this work.

3.4.2.1 Observations

When collecting data in action research, participant observation is essential:

> *"In action research, the emphasis is more on what practitioners do than on what they say they do."* (Avison, Lau et al. 1999:96)

Action research has an explicit need for participant observation (Baskerville and Myers 2004:333) and a number of different data sources can be used to capture this. There are generally two types of observation: 'covert' and 'overt' (Oates 2006:208). In the former, the people being observed are not aware that this is happening; in the latter, they know that the researcher is watching what they do. Observations, whether covert or overt, are based on a researcher's impression of the situation drawing on their senses such as hearing and seeing.

The earlier discussions of bias in action research extend their applicability to the bias in the observations. The two distinct sources of bias are:

> *"'A' the effects of the researcher on the case and 'B' the effects of the case on the researcher."* (Miles and Huberman 1994:265)

It is acknowledged that 'field study researchers' are less likely to be in danger of the earlier bias 'A', since they spend enough time to blend in with the research setting. However, this increases the possibilities of bias 'B', where the research settings can absorb the researcher and make him/her less likely to question the taken-for-granted issues (Ibid.). There are a number of ways in which these biases can be managed and one of these is the 'triangulation'. The essence of triangulation is that the researcher relies on independent measures to evaluate one situation (Hoepfl 1997; Miles and Huberman 1994). Triangulation can be on several levels including one where different data sources are used (Anfara, Brown et al. 2002). Therefore in addition to the observations, which are essential in action research, the current work will draw on focus groups, interviews and other documentary sources.

3.4.2.2 Focus groups

A focus group is a facilitated discussion amongst research participants. It is based around a certain pre-determined research topic. It is

> *"... a special type of group in terms of purpose, size, composition and procedures."* (Krueger and Casey 2000)

This kind of data source is particularly attractive in exploring complex situations with multiple interpretations and different stakeholders (Litoselliti 2003; Stycos 1981). Although focus groups are popular data collection tools in marketing and social sciences, they are also used in other disciplines (Stycos 1981). Focus groups allow action research participants to come together and discuss issues being experienced and propose actions to be taken (Mason 2002; Whatley 2004). On the other hand, focus groups have a number of limitations such as:

> *"...bias and manipulation, false consensus, difficulty in distinguishing between the individual view and a group view, difficulty in making generalisations and difficulty in analysis and interpretation of results."* (Litoselliti 2003)

These limitations require management in order to minimise their impact (Banham 2005). Studies using a triangulation of two data collection methods found outcomes of a focus group to be slightly different to that of a survey. However, direct contradictions were not frequent but did occur (Stycos 1981:454). It is therefore useful to use another data collection method alongside the use of a focus group. This could be for example an interview (Morgan 1996:129).

3.4.2.3 Interviews

Similar to focus groups, an interview is a special type of dialogue between people, where one of individuals is interested in finding out something from the other(s) and therefore is leading the conversation. However, the number of participants is usually smaller than in focus groups:

> *"An interview is a purposeful discussion between two or more people"* Kahn and Cannell (1957) quoted by (Saunders, Lewis et al. 1997:210)

Group interviews are sometimes referred to as focus groups. Therefore the term 'interviews' in this research refers to a conversation between two people (the researcher and a single participant), whereas the term 'focus group' is used to refer to conversations between three or more, i.e., the researcher and at least two other participants.

There are generally three types of interview based on the degree of structure imposed by the researcher: structured, unstructured and semi-structured (Oates 2006:187). In structured interviews only predetermined questions are asked and in unstructured the control is more with the participant who develops her/his ideas. The exploratory and explanatory nature of the current research influenced the choice of semi-structured interviews. These included some basic questions and themes that the researcher was interested in but also further follow up questions asked in order to explore any emergent issues in more detail.

Interviews have limitations. These can be situations where participants are telling the researcher what they think she/he wants to hear – resulting in bias and false consensus (Miles and Huberman 1994). The researcher can also steer participants by asking leading questions and/or by emphasising a certain theme or topic. The actual data collection and interpretation is subject to three judgmental heuristics in relation to 'representativeness', 'availability', and 'weighting' (Miles and Huberman 1994:263). Hence the researcher has to be on-guard when it comes to interpreting events and follow up any surprises, checking extreme cases and be generally critical of the data collection process trying to manage these biases.

3.4.2.4 Data sources summary

The observations, focus groups and interviews undertaken in the current research were guided by a 'rationale template' shown below (Table 9: Data sources utilised in this research).

Overview of data sources and rationale behind them		
Data source	***Why?***	***How?***
Observations	In order to capture the personal interpretation of events. Addressing the second pragmatism tenet: ***"truth is embodied in practical outcome"***	The researcher observes his face-to-face interactions and electronic communications on the programme and updates his own research log. Other participants are asked about their experience and practice in interviews and focus groups.
Focus groups	In order to get an appreciation of different interpretations of reality. Addressing the fourth pragmatism tenet: ***"human action is contextualized socially"***	Staff involved with the programme were invited to sessions where they could share their observations. These sessions were generally labelled "meetings" or "away days" dependent on the length of time allocated for the sessions. Student focus groups were also utilised to get a broader view of their experiences and observations of practice.
Interviews	In order to gain a deeper understanding of individuals' views and observations of commonly experienced events.	Semi-structured interviews allow for further exploration of individual's observations and their opinions about the issues discussed in focus groups.
Documents	To gain an understanding of programme relevant events and decisions that took place even though the author was not able to be part of them.	Minutes of meetings, emails, discussion board messages and communications were examined. Analysis of these was presented at focus groups to stimulate discussions where possible.
Literature	To get a better appreciation of general issues surrounding implementation of blended learning in higher education.	Literature search was conducted in the local University of Salford library, via the google.scholar.com and general electronic resources offered through the electronic library. Keywords used for the searches were related to the themes identified through the action research.

Table 9: Data sources utilised in this research

3.5 Summary

This Chapter has been concerned with research design, with particular reference to the needs of the current research. The considerations started with a high level of abstraction with philosophical paradigms, then moved on to the research methods and finally to the details of data collection. The development of an appropriate research 'tool' (Hirschheim 1985:2) has taken into account the research question, research context, traditions within IS research, criticisms of particularly action research, data collection tools and the researcher's own beliefs. The decision was taken to adopt interpretive philosophical assumptions and to utilise action research drawing on qualitative data from observations, interviews and focus groups.

The interpretive philosophical assumption is based on an epistemological belief that the researcher and the researched influence each other and therefore knowledge is subjective. Methodologically, it has been assumed that knowledge is generated via an inductive process, which is subject to multiple interpretations, which aim for traceability. Ontologically, beliefs about the physical and social reality have been assumed to be subjective and created by humans. From the human intention and rationality point of view, people cannot be researched objectively since they are all individuals and possess their own values and rationale. Social order is perceived as temporarily stable and conflict is controllable. The relationship between theory and practice is based on the understanding of specific cases, which are dynamic and based on socially constructed meaning.

The traditional values of the action research method have dictated the need to subscribe to a pragmatic set of tenets. These tenets highlight the importance of practice, the need for observation and theorisation within the action research. The current work draws on qualitative data. The data sources for this were participant observations, interviews and focus groups.

The next Chapter will describe the implementation of the research design in practice. This will outline the research setting, the author's background and both data collection and analysis.

Chapter 4 Research implementation

4.1 Introduction

The previous Chapter focused on the literature surrounding research design. In particular, literature was examined in relation to philosophical assumptions, research methods, and types and sources of data collection. This Chapter builds on the decisions about the current research made in the previous Chapter and provides a detailed account of the way in which the current research was implemented in practice. The aim of this Chapter is to provide the reader with a 'rich description' of the current research and thus permit them to make their own interpretations about it. As highlighted in Figure 12: Conceptual framework: Chapter 4, the individual arrows of the research lens influence the three themes – pedagogy, the blended learning concept and the pragmatic issues under investigation in this study.

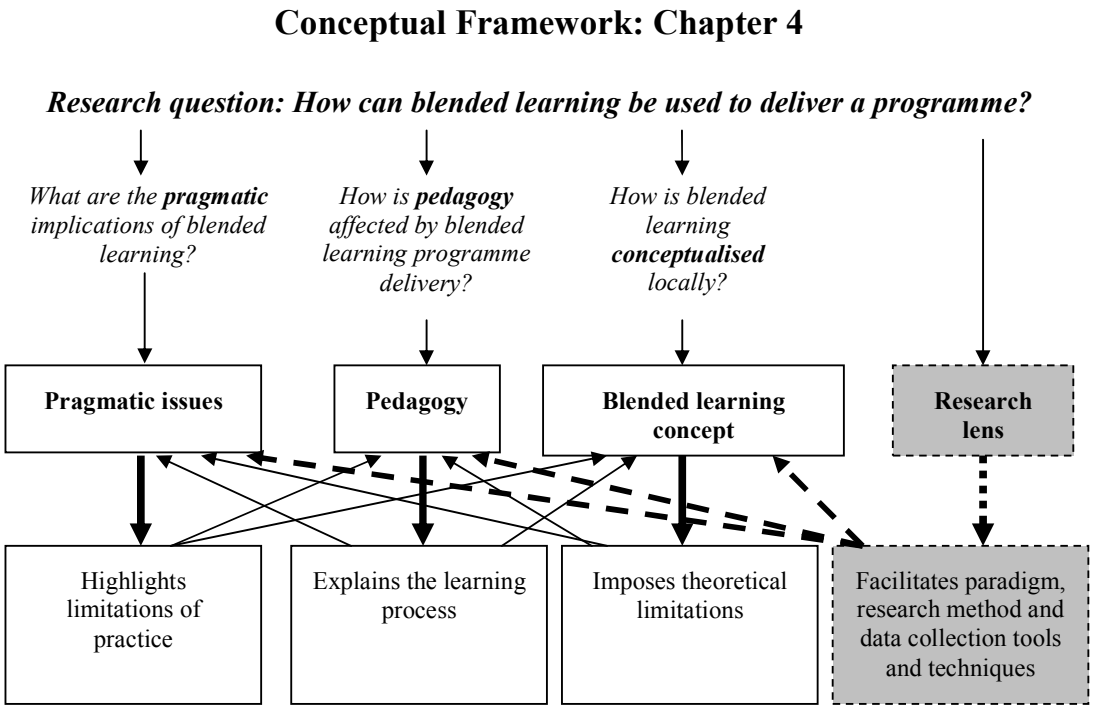

Figure 12: Conceptual framework: Chapter 4

The structure of this Chapter is as follows: Firstly, the research settings will be described to satisfy the interpretive philosophical assumptions that all knowledge is context bound. The context in this case is described in terms of the overall programme being studied, and the students and staff who took part. It also outlines the author's cultural and educational background. Secondly, there will be a description of how the action research was implemented, drawing on the four cycles of data collection. Ethical issues and how these were addressed will also be discussed. Finally, the data collection process and data analysis of this work will be explained and a summary presented which outlines all activities and issues raised.

4.2 Research paradigm implementation

The interpretive epistemological assumption states that there is no such thing as objective knowledge since all studies are biased and therefore subjective (Johnson and Duberley 2000: 78). In line with accepted interpretive beliefs, knowledge creation in this research is subjective, meaning that a researcher's background, the research context and other research participants will influence the knowledge created through this process. It is therefore necessary for the reader to be familiar with the researcher's background, the research settings and the research participants in order to appreciate the "rich details" of the research process. Whilst the descriptions related to the researcher will be detailed, the participants are protected by anonymity, which was agreed as part of their consent to participate in the research. Descriptions of the participants are therefore generic and unspecific, so that their identity is not revealed.

This section is subdivided into three sub-sections. The first sub-section is concerned with the description of the research setting. The second sub-section provides a description of the participants and the final sub-section outlines the researcher's background.

4.2.1 Research setting description

The strategic developments of the University of Salford, with regard to e-learning, were translated into practice by the university wide roll out of Blackboard Version 6 Virtual Learning Environment; and by the creation of a Learning Technologies Centre (LTC) of central support for the adoption of e-learning (Salford 2002).

This work is based in the Salford Business School, which incorporates the former Information Systems Institute. In the past, part time students on the undergraduate Bachelor of Science programme in Information Technology were required to attend face-to-face sessions one day a week. The current research, which started in 2003, coincided with the introduction of a replacement programme, which was designed with blended learning in mind. The new programme was restructured to better suit the needs of part-time students with attendance at face-to-face sessions required only one evening per week. The rest of the time the course was supported via a Blackboard Virtual Learning Environment (VLE) (Procter 2003:4):

> *"Students on equivalent full-time modules would have approximately three times as many hours on their timetable. The difference is accounted for by the* ***extensive provision of e-learning materials.*** *The programme team is making* ***full use of the VLE.*** *Each module has its own area on the VLE, together with an area for the programme as a whole."* (Procter 2003:4)

There were a number of characteristics that made this programme unique as outlined in Table 10: Adapted after (Procter 2003:3).

The entire programme comprises five academic years, and this research is only concerned with the first two. Each academic year comprises two semesters, each of which was concerned with two modules. A module is a standard term in the United Kingdom which describes the study of a particular subject area. On this part-time degree the modules were primarily worth 20 credits *(each credit is equivalent to approximately 10 hours learning time)*. A detailed description of the participants in the programme follows in the next section.

BSc IT part time - Programme key features

- Attendance requirement is one evening per week. This takes place in secure, good quality teaching accommodation with good access to transport and parking as well as basic University facilities such as catering and computer use;
- All course content is available on the World Wide Web. Internet access is a condition for enrolment on the programme;
- The University supported Virtual Learning Environment (VLE) is the tool used for the delivery of course materials and for other aspects of course support and information, for example discussion boards;
- All modules are either 20 or 40 credits, including an optional 40 credit Work Based Project module at level 2, and a mandatory 40 credit Dissertation at level 3 which may also involve work based research and development. In total therefore 80 credits out of a total of 360 for BSc Hons could be conducted wholly in the workplace;
- Sub-honours degree level qualifications are built in (and currently being developed further). BSc Honours would typically take 5 years;
- Students are encouraged to seek Accreditation for Prior Experience and Learning (APEL) at level 1. Entry directly into level 2 is possible. APEL at more advanced levels is a much more complicated issue, not least because of the contribution of modules at levels 2&3 to University awards and also the issue of pre-requisites;
- Teaching assistants (who are also studying for postgraduate qualifications) are employed to provide online and offline support to students on the programme.

Table 10: Adapted after (Procter 2003:3)

4.2.2 Description of participants

The design of the programme emphasised the use of electronically facilitated resources. All students and the teaching team were enrolled on the VLE, where each module had a designated content area and online communication tools. Students, lecturing staff and support staff are briefly introduced as follows:

Students on the programme

Students were predominantly mature (21+ years of age) and the majority of them were in full time employment. The nature of their employment varied, with some students already working in the IT industry and wanting to progress to a higher level, and others in other industries wishing to enter the IT domain. The working hours of individuals also varied but as the majority of students were in full time employment, most had difficulties attending evening class sessions at 4pm.

In the first year of the current research approximately 40 students enrolled on the programme, in the second year it was about 20. Due to the Accreditation of Prior Learning, some students came directly into the second level and some were exempt from certain modules, which continuously changed group dynamics. Overall, eight students (students a – h) took part in interviews in this study. The majority of student data however, has been collected through focus groups, and in this case the participants are not differentiated but their contribution is quoted as a whole.

Lecturing staff

Most lecturers involved in this study were Information Communication Technology (ICT) literate and had a wealth of lecturing experience, including some form of experience with learning technologies. Some lecturers have taught using websites to communicate information, and have supported students via email and other technologies. Although the majority of lecturing staff had been lecturing for several years, there was still a wide diversity of experience, from junior colleagues who joined in the last five years to others who were nearing retirement. Overall, nine members of lecturing staff (lecturers a - j) are represented in this study who participated in interviews. There were other lecturing staff who participated in focus groups but are not specifically attributed, but as with the student focus groups above are quoted as a whole.

Support staff

There were three support groups directly involved with the programme: administrative staff; technical support and graduate teaching assistants (GTAs). The graduate teaching assistants were postgraduate students and usually there was one GTA and one lecturer allocated per module. Of these, six individuals participated in interviews and are identified as Support A to F in the description of work done. Several other support staff have also participated in the focus groups but are not specifically identified due to their limited input and the complexity of identifying them as individuals in a group discussion. One of the GTAs on this programme was the author of this thesis and his background is outlined in the following section.

4.2.3 Researcher's background

This sub-section deals with the subjectivity of interpretive research, by outlining the researcher's background details. The researcher spent the first decade of his life in the Russian speaking Ukraine, then another decade in German speaking Germany. For his Abitur, (the German equivalent of A-Levels), the researcher majored in Maths and Physics, both highly positivist disciplines, predominantly based on the acceptance or rejection of a hypothesis. Dealing with mathematical and physical problems it was predominantly a matter of finding the correct answer of which there were usually only one or two. The author found both of these subjects easy to understand and was able to gain high scores in assessment. This positivist focussed background was reinforced by the science dominated education received in the former Soviet Ukraine school system and by the low level of language involved in these subjects, (in Germany he was studying in his second language). In subjects influenced by the interpretive paradigm such as Art, the author was less successful.

The trend of success with positivist based subjects continued when the author was studying for his BSc in Business Information Systems in the Information Systems Institute, University of Salford. For example, subjects such as bookkeeping and programming received better marks than essay type assignments. At the time of starting his Ph.D. in 2003 therefore, it was perceived as the "natural choice" for the researcher to adopt the positivist paradigm. However, during the process of this Ph.D. and the author's attendance at the doctoral school, which was dominated by interpretive scholars, it became apparent that an interpretive standpoint would be a more appropriate one from which to conduct this study. In particular, Miles and Huberman's "Qualitative Data Analysis: An Expanded Sourcebook" (Miles and Huberman 1994) has demystified the issue of interpretivism and convinced the researcher that the study of social settings from a positivist standpoint is not the most appropriate approach.

At the time he commenced his Ph.D. study, the researcher also began work as a Graduate Teaching Assistant (GTA). One of his duties was to support the newly re-designed part-time BSc programme in Information Technology, which is the subject of the current research. The modules supported by the author varied, and this meant that not all modules were observed by him. The table below outlines the individual action research cycles and the modules that the author observed (see Table 11: Module observed by the author): Systems Analysis and Design, Management Business Operations, Project Management for the first cohort of students and Systems Analysis and Design for the second cohort.

Observed module by the author				
	Cycle 1	***Cycle 2***	***Cycle 3***	***Cycle 4***
Academic year and semester	2003/2004 Semester 1	2003/2004 Semester 2	2004/2005 Semester 1	2004/2005 Semester 2
Observed module	- Systems Analysis and Design (cohort 1)	- Management Business Operations (cohort 1)	- Project Management (cohort 1)	Systems Analysis and Design (cohort 2)

Table 11: Module observed by the author

This means that the author observed first hand three different academic staff and two different cohorts of students. The variety of experiences provided a broad view of the implementation of blended learning, which yet again was of benefit to this research.

4.3 Research method implementation

The previous section was concerned with the description of the context of this research. This section focuses on the process of its implementation. The six characteristics of action research, as outlined in the previous Chapter, suggested that it was a suitable research method for this work. This section is subdivided into three sub-sections. The first sub-section documents the limitations of action research as identified in the literature and describes how they were managed. The second sub-section outlines the ethical issues. Finally, a summary of all action research activities is presented, outlining each of the four action research cycles.

4.3.1 Action research limitations management

A number of authors have highlighted the limitations of action research (see Chapter 3), which are the consequence of working in real life environments, the multitude of variables and social settings which result in the questioning of any action research findings. These limitations are discussed in the nine points of Table 12: Action research risk management and mitigation. The criticisms appear in the left column of the table and their management in the right column.

Action research risk management and mitigation	
Criticism	***This research***
Lack of contribution to theory and practice	Several theoretical models and theories were identified, implemented and monitored through the action research cycles. These were tested in practice and subsequently amended. Where possible, findings were communicated to a wider research community. The practical contributions focused on collaboration with lecturers on the programme and bringing theoretical issues into practice, for example the development of discussion board guidelines, electronic assessment and learning using e-content.
That action research is consultancy not research	The power lies with individual lecturing staff responsible for the delivery of the modules. This prevented the consultancy mode of action research taking place. Essentially, due to academic freedom, unless people believed that a certain change had to take place they were not making it. Documentation of events and data collection was taped where possible, transcribed, analysed and presented to the participants. There were no deadlines apart from the Ph.D. completion period and there was no financial gain associated with this work. The theoretical rationalisation was based on theories of learning, which were utilised in order to understand the theoretical effects in practice.
No clear finishing date	Despite not having a clear finishing date, the process of a full time Ph.D. dictated a timeframe limit. The finishing time was two years from the start of the research: September 2005.
Inappropriate duration of projects	The individual cycles were dictated by the academic semesters. There were two semesters per calendar year, each of which was considered as an individual action research cycle.
Lack of rigour	The research process was implemented as rigorously as the situation permitted. Where possible documentary evidence was collected and each research cycle was associated with interview and focus group transcripts. Interim findings were published and passed through a peer review process. As part of the Ph.D. process in the University of Salford, this research also successfully passed interim and internal evaluations. Building on interpretive beliefs a detailed account of events will be provided (see chapters 5 and 6). This thesis aims to strike a balance between data overload and insufficient data to be able to see the development of argumentation.
No clear level of participation	There were a number of actors involved in the given research. These actors include nine academic members of staff and six support staff. A number of measures were taken to allow democratic decision making. These included staff focus groups, co-authoring of academic papers that resulted from findings in the given research, and a number of informal discussions with those colleagues involved. The participation levels will be indicated in the documentation of each of the

	action research cycles, outlining the number of individuals involved in the process. Each lecturer was interviewed where possible before and after their teaching on the programme. There were a couple of individuals who were less willing to participate. It is therefore important to note that staff took on the ideas for improvement with varying degrees of interest and hence the actions were implemented to a greater or lesser degree in some cases, as described in the individual research cycles.
Potential for self delusion/group think	Students' focus groups and staff observation data were used to evaluate the programme on a semester basis and this was fed back to staff in meetings and focus groups. The data was discussed collectively and actions agreed upon and communicated to staff. Members of staff unable to attend focus groups were sent notes and minutes for their information and comments. Further reflection on the data was undertaken by some research participants through the co-authoring of internal and external presentations of the findings. The majority of critical reflection came from the practitioners engaged on the programme. Mature students were not shy of making critical comments on their learning experience. Similarly, academic staff were constructively critical while in the focus groups or meetings.
Limited generalisations	Both generalisation and validation are characteristics of the positivist paradigm and therefore are not expected in this research. To counteract any criticism of 'lack of rigour', a detailed account of all significant situations will be provided in the spirit of interpretive research. The research aim, theory and method have been outlined. This enables the reader to follow the planning of research criteria, activity and evaluation cycles. As to the quality or validity of action research, the 'one right' outcome is impossible to produce. The emphasis in this work is therefore on the exploration of alternative interpretations.
No agreed sequence of activities	Going back to the roots of action research, the author attempted to adhere to the process as outlined by Lewin's cyclical model (Burns 2000). However, the reality of action research in practice was more in line with the modification of Bate [see Figure 11: Change with action research approach adapted after: (Bate 2001)]. For example, the design of the blended learning course and the *therapeutic* stage happened prior to the researcher's engagement. This meant that several decisions were made by other actors. In order to understand these, a document review and interviews with appropriate staff were conducted.

Table 12: Action research risk management and mitigation

As can be seen from the above table, the implementation of action research in this setting is subject to limitations. However, the author believes that the benefits of action research outweigh the associated complexity. These benefits were also welcomed by the programme team and the other information system action researchers:

> *"In our view, the potential benefits to practice and research in doing AR [Action Research] greatly outweigh these difficulties. No other research approach has the power to add to the body of knowledge and deal with the practical concerns of people in such a positive manner."* (Avison, Baskerville et al. 2001: 44)

An integral part of action research is collaboration and this cannot be achieved if the collaborators are afraid that their contributions will be used against them in any way. Therefore ethical considerations were made and implemented as discussed in the following section.

4.3.2 Addressing research ethics

Ethics is an intrinsic part of action research and is evident in several definitions of action research, emphasising a "mutually acceptable ethical framework" [(Rapoport 1970:399); (Avison, Lau et al. 1999:94)]. The mutual acceptance is questionable in situations where either the practitioners or the researchers have predominant control (Avison, Baskerville et al. 2001:42). It is believed that the power within this research was balanced, since the research environment was an academic setting where practitioners had the academic freedom to implement the actions or not.

Due to the emerging nature of the Ethics Committee at the University of Salford, the researcher was not aware of the need for the formal approval of ethical consent before the research commenced. Therefore, only at the stage of the second action research cycle was formal approval of Ethical Consent applied for and granted, by the Research Governance and Ethics Sub-Committee (RGEC) on the 23rd March 2004 under the project code RGEC03/40 (see appendix 10.2). The initial agreement and subsequent adjustments to the research data collection were all passed through the RGEC (see appendix 10.1). As a result, a research overview, consent and consent withdrawal forms were devised and used for all individuals when collecting data. The basic outline of these forms provided participants with anonymity, confidentiality, the option not to participate, an option to withdraw consent and information on how to do so.

All participants who took part in interviews and focus groups have provided their written consent to participate in this research. However, it was not practically possible to gain consent from every social interaction that took place during the research over the two years. Therefore, observations and the author's personal research diary, which recorded these, have not been published. The essence of these observations is documented in this thesis in edited form. To gain interpretations of other participants' observations, questions were asked on their experience of the course and hence these observation accounts appear within the interview data.

Particularly in action research, the interpretation and the decisions reached are negotiated amongst the participants who are co-researchers (Oates 2006:67), hence it is all those people involved who should be credited for their work. This however is not entirely possible, since these individuals are anonymous and their work is not attributed to them directly. This thesis attempts to describe the process in such a manner that all participants are anonymous where possible, by being allocated a random letter to refer to their contributions.

4.3.3 Action research cycles outline

Four cycles of action research were undertaken in this work. A summary of all activities is represented in the table below (Table 13: Summary of action research activities). The first row of the table outlines observed modules, which were supported by the researcher in his role as a graduate teaching assistant. The second row of modules running simultaneously outlines those that were taught at the same time but supported by other graduate teaching assistants. For the duration of the first three cycles the author was involved with the same student cohort. On the fourth cycle it was the second cohort of this part-time programme, which meant that the students observed were different from those of the previous cycles.

Despite the change of student cohorts observed by the author in the final action research cycle, all students on the initial cohort were given an opportunity to speak in a focus group or in an interview and share their observations.

The next section will outline the data collection activities that were taking place within these four action research cycles. Emphasis will be placed on the type of activity and who the

participants were. A brief outline of the individual processes will also be given to provide the reader with the richness of the action research experience.

Summary of action research activities				
	Cycle 1	***Cycle 2***	***Cycle 3***	***Cycle 4***
Academic year and semester	2003/2004, Semester 1, cohort 1	2003/2004, Semester 2, cohort 1	2004/2005, Semester 1 cohort 1 and cohort 2	2004/2005, Semester 2, cohort 2 and cohort 1
Observed module/s	- Systems Analysis and Design (cohort 1)	- Management Business Operations (cohort 1)	- Project Management (cohort 1)	Systems Analysis and Design (cohort 2)
Simultaneous module/s	-Programming Business Information Systems (cohort 1)	- Visual Programming (cohort 1)	- Databases (cohort 1) - Management Business Operations (cohort 2) - Programming Business Information Systems (cohort 2)	- Visual Programming (cohort 2) - Systems Production (cohort 1) - Networking (cohort 1)

Table 13: Summary of action research activities

4.4 Data collection

Previous sections of this Chapter have introduced the setting of this research, and have provided a generic overview of how this research was structured based on modules and years of the programme. Four cycles of action research were undertaken drawing on the three main types of primary data collection: observations, focus groups and interviews. This section is subdivided into four sub-sections that outline the data collection. The initial three sub-sections will provide a detailed description of the data collection process: that of observations, focus groups and interviews respectively. In each of these three sub-sections an example will be used to illustrate the individual data collection technique. The fourth sub-section is a summary of data collection activities. This will provide an overarching view of all data collection

events grouped by the individual action research cycles. A data collection timeline listing all interviews and focus groups in this study is provided in Appendix 10.4.

4.4.1 Observations

The observations made in this research are based on the author's perception of face-to-face sessions and electronic interactions with staff and students involved with the part-time programme being studied. The initial focus was on the electronic side of the blend, since it was the use of electronic tools which was of particular interest to the author. The observations were not structured in any particular order and any events that were perceived as 'unusual' were given particular attention. However, the research questions placed particular emphasis on pedagogy, concepts of blended learning and blended learning practice. As the author was a graduate teaching assistant on the course the type of his participation was 'practitioner-researcher'. Although the observations were covert, the staff and students who took part in interviews and focus groups signed a consent form, which allowed their comments to be used for this research.

The form the observations took during the two years of this research varied. In some sessions the author was able to sit in the class as part of the student group and observe the session, which was facilitated by a lecturer, and make notes on the process. In other sessions the author was engaged with students supporting them in their activities. Usually, email correspondence and any electronically facilitated issues were copied directly into the logbook to remind the author of the events and issues raised. For example, email exchanges and message posts were recorded. Notes were made in relation to the activity set and the style of the interaction. For example, where the session is interactive, are there any problems? Are students involved and asking questions or do they lean back and appear disengaged? The 'observations' would include recording tasks to be done by the author and noting significant emails that were sent, in the logbook. The following is an extract of the observation of the lecture which outlines some of the main events happening during the evening (see Table 14: Research logbook Extract from observations on the 3 November 2003).

This served as a reminder of the fact that students were struggling with the first modules' assessment process. They felt so overwhelmed by the expected workload that the lecturer adjusted the assessment to 10% multiple choice questions instead of another assignment and

extended the assignment submission deadline for a further week. It was also noted that the introduction part of the session was very interactive with a number of students being engaged in the interaction with the lecturer.

Extract from observations on the 3 November 2003.

"Intro to the course – clarification of the assessment MCQ to be 10% of the module
The confusion of the course websites being empty.
Feeling of sinking of people on the course (Student X)
The Marking scheme is to be published on VLE

Extension agreed for the assignment deadline for another week.
Assignment revision introduction was very interactive with about 12 different students being engaged in the discussion."

Table 14: Research logbook Extract from observations on the 3 November 2003

Observation data is subject to limitations. These include selective recollection of events and individual perceptions (Oates 2006:211). In order to overcome these and limit the risk of being too reliant on impressions, the perceived 'main themes' were presented as experience in interviews and focus groups to gauge others' opinions. This allowed the author to gain insights from staff and students' accounts of their own observations and reduced selective recall or perceptions in the researcher's mind.

Overall the logbook is a 144 page document (213,000 characters or 45,000 words), which accounts for a total of 90 days of research interaction structured by the individual dates. The following figure shows an example of the table of contents of this logbook (see Figure 13: Screenshot of the logbook entries and associated table of contents). This outlines the tasks that were undertaken by the author, full emails and discussion board posts which contain the names of individuals concerned and any other main themes as observed in the sessions or online communication. Because the logbook contains sensitive information it is not published and is only used privately by the author to trigger the recollection of events at the time.

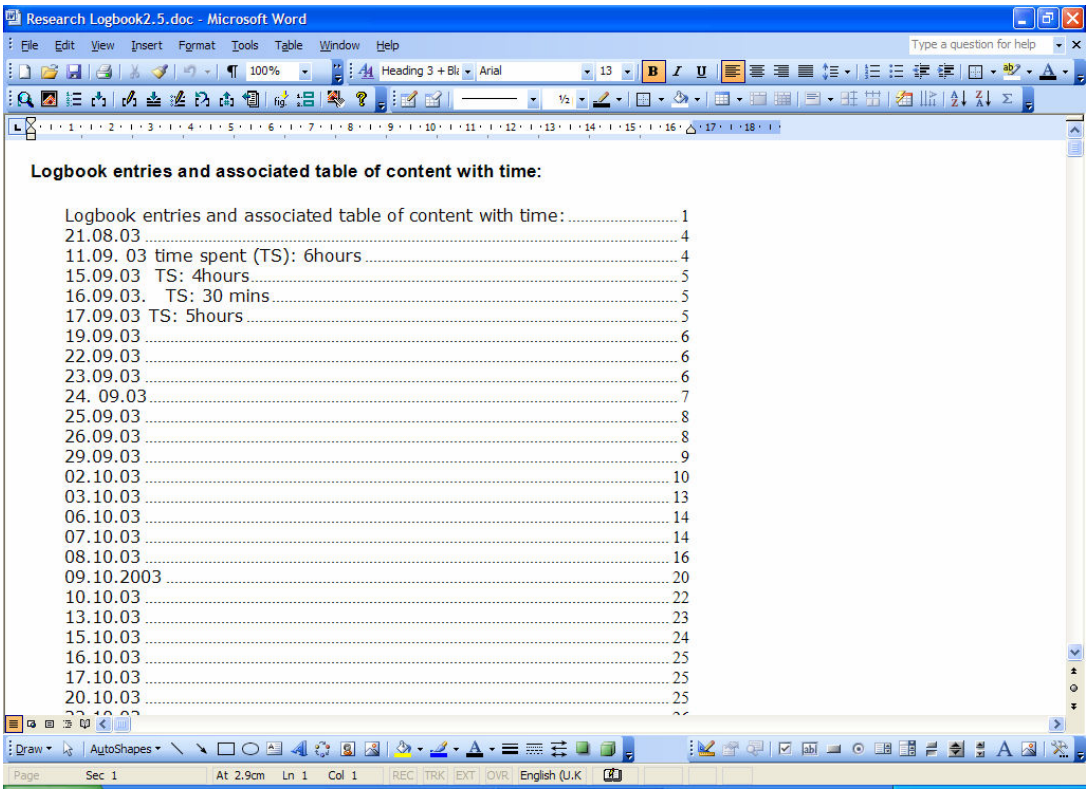

Figure 13: Screenshot of the logbook entries and associated table of contents

These events were used to inform interviews and focus group discussions, which in turn were transcribed and made available to the interviewees for their approval of the data being used for this research. References to interviews and focus group quotes are extensively used in the action research cycle's description. However, the logbook entries are represented by the author in his own words.

4.4.2 Focus groups

Drawing on the observations made by the author, a number of focus groups were facilitated. In this research the two main groups were staff facilitating the programme and students studying on the part-time programme. All students were given the opportunity to share their experiences of the course in focus groups that took place at the end of each semester over the two year period. This resulted in 6 focus groups for the overall action research duration. In order to encourage students' attendance at the focus groups, tea and biscuits were provided as a 'thank you' for their time and comments on their experience of the programme.

The student focus groups were held in the same rooms where lectures were taking place. This was simply because students were familiar with the environment and would know where the room was. The focus groups usually took place at the same time as students would arrive for the evening class. Usually, these groups were combined with a revision session or started earlier before the actual class began. The staff focus groups were held in several meeting rooms, in one case it was a member of staff's office. There were also two off-site focus groups. These were at the end of the first year in the Manchester United Stadium grounds at Old Trafford and at the end of the second year in the Lowry conference rooms in Salford Quays. Unlike the student focus groups that usually went on for about one hour, the staff away days lasted for three hours and were accompanied by a meal.

The first step of each focus group was to give an explanation of the research purpose and the signing of the consent forms. Usually, the focus group facilitator provided some comments or themes based on the researcher's observations and students were asked to share their views on these. Where it was perceived as necessary, discussions were probed with further questions to reach a better understanding of the issues discussed. The facilitators of the focus groups varied. Sometimes it was the author who had to facilitate the discussion, other times it was a colleague who was able to guide the discussion, allowing the author to be in the background making notes and observations of the process. All focus groups had someone taking notes of the process and of the issues being raised. This allowed for a contingency plan in case the tape recorder was not working and also provided another analytical perspective of the process. Going through these notes allowed the author to check if the issues and themes he had identified were raised, when analysing the data, or not.

The themes brought up in the observations and any further aspects as confirmed or added by the student focus groups were then fed to the staff focus groups. The initial focus groups were much more open ended where a theme was proposed and the participants had the opportunity to comment on the positive and the negative aspects surrounding it. The three themes that were the focus of this work at the outset were: **blended learning** e.g.: Structure of the course - Online and Face-to-Face, flexibility of the course, **assessment** – e.g.: methods individual/group and online or face-to-face, **student support** – e.g.: Blackboard, GTA's, Other University services, lecturers and any other issues. For the first focus group, students were asked to fill out the one page form which asked them to think about the positive and negative aspects of the issues, discuss these issues in pairs and feed them back to the whole

group. This allowed students to document their views first and then discuss them with the whole group. The forms were collected at the end of the session and enriched the analysis. The following is an example of the initial focus group form (see Figure 14: Areas of discussion form used for initial focus groups)

Areas of discussion:

Please brainstorm on issues related to the following course elements:

Blended Learning – e.g.: Structure of the course - Online and Face-to-Face, flexibility of the course.	
Strengths	Weaknesses
Assessment – e.g.: methods individual/group and online or face-to-face	
Strengths	Weaknesses

Figure 14: Areas of discussion form used for initial focus groups

Once this research progressed, the focus groups approach was refined where students were prompted with more specific questions for discussion. A focus group guide was created for facilitators, which listed the main themes of interest and sample prompt questions. Usually, the first question was generic allowing participants to say what they felt, for example:

> *"OK, first point, in general, what do you think about Blended learning on the part-time course? In particular the area of how it was organised?..."* C4 –FG Students 90505

This facilitator guide was used for all sessions and questions were updated based on the experience observed and the data collected.

Focus groups with staff were sometimes called meetings or away days depending on the length of time involved and the location. The staff focus groups were held to discuss the observations, problems and issues arising, to consider possible improvements and agree actions for subsequent action research cycles. The staff focus groups were less structured where the agenda was proposed by all participants, unlike in the student focus group where there was a framework set out by the author. However, the author also contributed to the staff focus group process by allowing issues raised by students to be heard by colleagues, and where applicable to discuss these in more detail. The following table represents a post hoc record of focus group activities (Table 15: Focus groups activity summary). The number of participants and the durations of the groups are estimates since some participants joined in whilst the focus groups was under way and others, despite their attendance, did not actively participate.

In order to reduce the risk of bias and manipulation, individual staff and student interviews were conducted. These again raised similar issues to the focus groups but allowed individuals to elaborate on their points of view and experience.

The interviews reduced any 'false consensus' arising from the focus groups and clarified an individual's position. The student focus group analysis was based on staff discussions; whether recommendations were implemented or not was up to each member of staff as a matter of 'academic freedom'. Where participants allowed, focus groups were tape recorded. These records were used for transcription and formatted to fit the QSR NVivo software requirements. In the example screen shot below the participant's name was replaced with a number (Figure 15: C4 – QSR NVivo view of FG Students 100505 – Document Browser view).

Focus groups activity summary						
AR Cycle	***Date (dd/mm/yy)***	***Staff or Students***	***Number of Participants (approx.)***	***Duration ca:***	***Venue***	***Length (characters)***
1	29/10/03	Staff	4	20 minutes	Venables building	3217
1	15/01/04	Staff	6	45 minutes	Ashworth building	3154
1	12/01/04	Students (cohort 1)	14	45 minutes	Maxwell building	5022
2	10/05/04	Students (cohort 1)	10	30 minutes	Maxwell building	2966
2	20/07/04	Staff	11	3 hours	Old Trafford stadium	142779
3	10/01/05	Students (cohort 1)	8	45 minutes	Newton Building	43116
3	7/12/04	Students (cohort 2)	12	30 minutes	Newton Building	22476
4	09/05/05	Students (cohort 1)	10	30 minutes	Newton Building	13774
4	10/05/05	Students (cohort 2)	8	35 minutes	Newton Building	26108
4	09/06/05	Staff	12	3 hours	Salford Quays	129628

Table 15: Focus groups activity summary

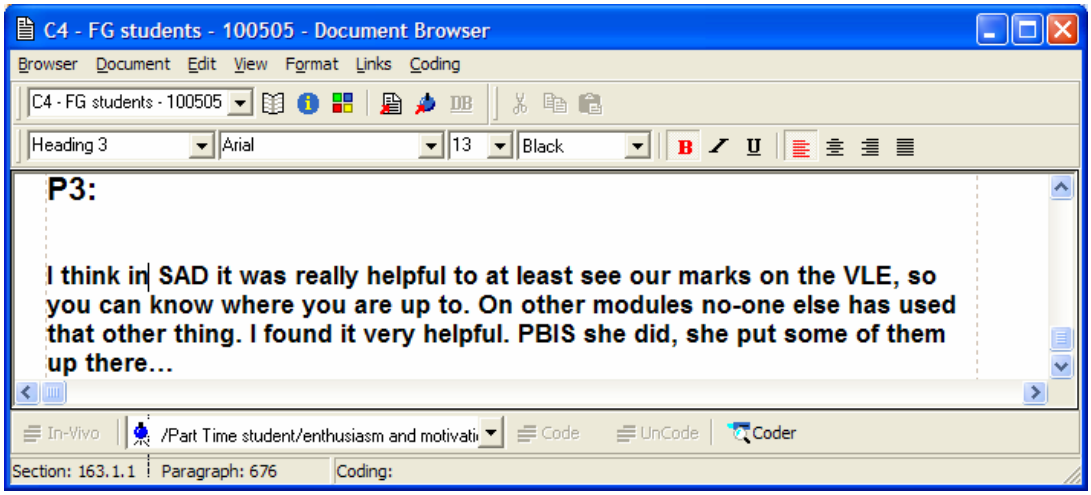

Figure 15: C4 – QSR NVivo view of FG Students 100505 – Document Browser view

The screenshot illustrates the document browser view which is used for analysing the transcripts. As can be seen P3 is used to substitute the participant's name within a focus group.

4.4.3 Interviews

The interview participants were strategically selected. All staff who taught on the programme or provided teaching support were invited to take part in the interviews. Generally, it was hoped that interviews would be held before and after their experience of teaching on the blended learning programme, but this was not always possible. At the last cycle of action research, students were also invited for interviews. Since it was not practical to invite everyone, ten invitations were issued, to represent different points of entry to the programme (some were direct entry into the second year and some had been present from the beginning).

The interview location varied due to the need for privacy. In some cases staff wanted to be interviewed in their offices, in others special rooms were booked to ensure minimum interruptions. Yet other interviewees were interviewed in the researcher's office. Two students were not able to attend the interview and chose to send their replies by email – using the interview guide as the prompt for their answers.

The process of the interview started with an appointment arrangement, this was confirmed and an email with a research overview and consent form was sent to the interviewee. Upon signing the research consent form the participants were asked if they were happy with their conversation being taped. This tape was used for transcription and as a reminder of the date and location of the interview. Once the interview was transcribed, it was emailed to the participant for approval.

Generally, the interviewing process started in a similar manner to the focus groups, with an explanation of the research and the signing of the consent form. The same questions and facilitation guides were used for both the focus groups and the interviews. Except in the focus groups, where sometimes the facilitator was not the author, all interviews were undertaken personally by the author. The first questions were open ended allowing the participant to feel more comfortable by taking control of the dialogue and talking about what they wanted to say, if there were any interesting issues emerging these were probed further. The second half of the interview was more specific asking the participants questions which built on previous observations or focus group data. Dependent on the situation, questions were dropped or their order varied.

The next section will summarise all the data collection activities which were made through focus groups and interviews. These will be allocated to the four action research cycles undertaken in this research.

4.4.4 Data collection activities summary

Overall, data collection was based on observation, focus groups and the interviews. Students on the programme, teaching staff and support staff were asked about their views and experiences over the duration of the four action research cycles. The number of interviews and focus groups increased with each cycle. The table below illustrates that in the first cycle of action research only two support staff, two lecturers and one student focus group were conducted (see Table 16: Data collection activities summary). In the fourth cycle of action research there were seven lecturers' interviews, three support staff, nine student interviews, two student focus groups and one staff focus group. This increase in the data collection activities is due to the fact that two student cohorts were observed.

Data sources broken down by action research cycles			
Cycle 1	***Cycle 2***	***Cycle 3***	***Cycle 4***
2003/04, Semester 1, cohort 1	2003/4, Semester 2, cohort 1	2004/05, Semester 1 cohort 1 and cohort 2	2004/05, Semester 2, cohort 2 and cohort 1
Participant observation 2 x Support interviews 2 x Lecturer interviews Student focus group	Participant observation 3 x Lecturer interviews Student focus group Staff focus group	Participant observation 2 x Lecturer interviews 2 x Support interviews 1 x Student interviews 2 x Student focus group	Participant observation 7 x Lecturer interviews 3 x Support interviews 9 x Student interviews 2 x Student focus group Staff focus group

Table 16: Data collection activities summary

An interviews and focus groups data collection timeline is provided in the Appendix 10.4. The next section will focus on the data analysis processes which were undertaken to inform action.

4.5 Data analysis

This Chapter so far has outlined the research settings, introduced the four action research cycles and provided a detailed account of the data collection. Individual data collection processes via observation, focus groups and interviews were outlined. This section will focus on the two stages of the data analysis process, which were undertaken during this research as part of action research and the post hoc stage, once the action research work was completed. The two processes of data analysis also influenced the structure of this section. Each analysis process has a dedicated sub-section.

The definition of data analysis in this research is adopted after Miles and Huberman (1994) as:

> *"We define [qualitative data] analysis as consisting of three concurrent flows of activity: data reduction, data display, and conclusion drawing/verification"* (Miles and Huberman 1994:10)

The individual flows of analysis are depicted in Figure 16: Components of Data Analysis: Flow Model, adapted after: (Miles and Huberman 1994:10). Each of these three flows will be briefly outlined and subsequently a description of their incorporation is provided. The data reduction flow, also referred to as 'data condensation' (Tesch 1990), is concerned with:

> *"the process of selecting, focusing, simplifying, abstracting, and transforming the data that appear in written-up field notes or transcriptions"* (Miles and Huberman 1994:10)

The data reduction starts at the outset of the research before the data collection phase. This is reflected in the selection of research questions and other initial thoughts. At the data collection stage, the reduction flow is primarily concerned with coding, summarising, identifying themes and discerning patterns. After the data collection period, the analytical emphasis is on which themes will aid in the drawing of conclusions and realisation. Since this analysis is undertaken as part of action research, the conclusions drawn inform actions for the subsequent cycles. They are then observed and if necessary, refined.

The second flow of analysis is data display. This is concerned with a logical, summarised essence of information to the audience. There are a number of different display formats for qualitative data, which include: tables, graphs, charts and diagrams. The general aim of this flow is to avoid the use of extended text, which would simply represent all transcripts made by the researcher, and to replace it with something easier to understand.

The drawing of conclusions and the verification stream is concerned with interpreting data and answering research questions. The interpretation can be in the form of the identification of themes, emerging patterns and explanations, all of which were induced from the data. The verification stage of conclusions is concerned with testing their plausibility. There are different levels of verification but in particular in this action research, these were done through observation of practice and participants' discussions.

Data analysis of qualitative research is an interactive process which constantly iterates between data reduction, display and conclusion drawing/ verifications (Miles and Huberman 1994:12). The three integral parts of analysis have been iteratively implemented in this work. Within each action research cycle these have taken place where the participants collected data through observation, reduced it to those issues which they wanted to discuss, then presented it

to others in the staff focus groups where certain conclusions were agreed and recommended to be acted upon.

4.5.1 Stage 1: Analysis during data collection

Generally, data analysis for this work was conducted in two main stages: during data collection (Stage 1) and post data collection (Stage 2). The analysis during the data collection (Miles and Huberman 1994: 50) stage was conducted in the real life settings of action research. The post data collection analysis was conducted once the researcher was 'detached' from the research settings. Whilst the first stage relied on other participants and their views and was primarily concerned with a pragmatic emphasis on 'solving the problem', the latter stage was concerned with the researcher's views and the views represented in literature and hence was more abstract and theory focused.

As discussed earlier, this research was subject to limitations which were a direct result of real life settings and to the author having limited control of the situation. The analysis during the data collection period resembled the action research 'learning process' presented by complex inter-relationships as highlighted by Bate (2001) [see Figure 11: Change with action research approach adapted after: (Bate 2001)]. A further limitation was that on several occasions there was insufficient time to fully transcribe focus groups or interview data to 'feed' the subsequent focus groups, placing greater emphasis on the author's notes rather than an extensive analysis of interview and focus group transcripts. This was a result of the pressures of graduate teaching assistant work and the need for further reading on relevant issues. Consequently, key themes as perceived at the time were noted (**Data reduction**) and used to inform staff focus group discussions (**Data display**) and to enable reflection (**Conclusion drawing/ verifications**) [see Figure 16: Components of Data Analysis: Flow Model, adapted after: (Miles and Huberman 1994:10)]. This allowed other participants to share their observations and reduced the likelihood of detail overload, and ensured that only those issues that were perceived as being paramount by most action research participants were addressed and the actions upon them agreed.

Components of data analysis: Flow Model

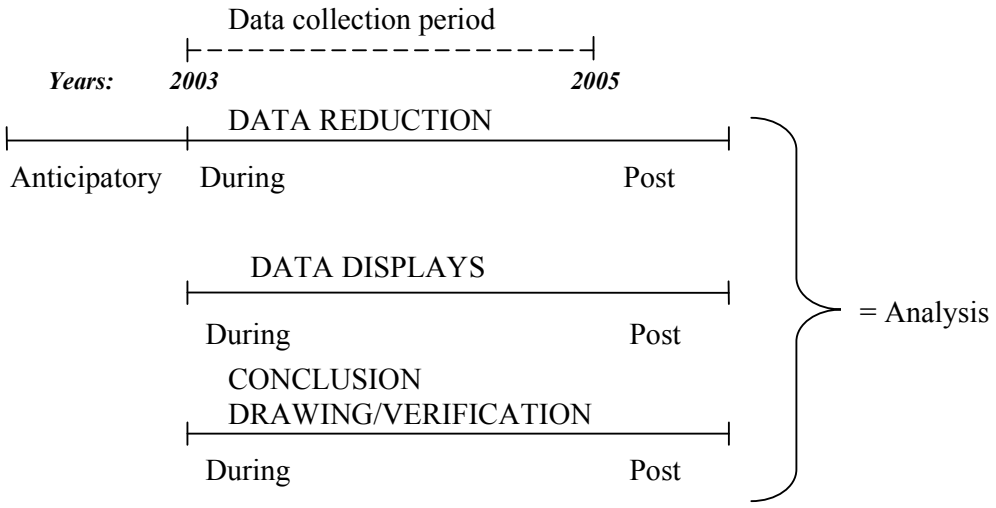

Figure 16: Components of Data Analysis: Flow Model, adapted after: (Miles and Huberman 1994:10)

Because of the exploratory nature of this research the research questions have undergone several changes throughout this action research process, based on the conclusions drawn at the time. Generally, themes that were raised were practice inspired and emerged from the views of the action research participants, allowing a certain level of analytical verification. For example, in the first cycle the issue of discussion board moderation was perceived as being problematic and resulted in the creation of discussion board guidelines and the reduction of assessed online discussions. The introduction of these actions reduced the number of online discussion board related issues.

The observations of the author were used as an initial data collection tool to focus this work. For example the issue of discussion board moderation was noted as being problematic:

> *"I have created a new forum to concentrate on the topic of discussing board guidelines so that we can determine what is appropriate for our course…"* Logbook entry for the 29.09.03

The issue of discussion board moderation (**Data reduction**) was discussed amongst the programme team:

> *"Yeah, one of the things that was really quite a disadvantage or where it was a problem really is the discussion board and should we have guidelines or should we not?"* C2 – FG – Staff 20704

Further research was undertaken by asking the programme team and the Instructional Technology Forum (ITForum) list users about their experience of online discussion guidelines (**Data display**), as it was becoming clear that online communication was problematic and required attention (**Conclusion**). This conclusion resulted in action to further research the online communication literature and implement findings in practice.

The data reduction, display and conclusions were done by participants when they were sharing their experiences with others. In particular, in staff focus groups some prepared issues that they wanted to draw attention to (**Data reduction**) by bringing some material with them to the session for example bullet points. This reduction of data was shared with others (**Data display**) and discussed with other participants before agreeing issues for actions with them (**Conclusion**).

The first analytical stage was concerned primarily with the operation of the programme. This resulted in the development of pragmatic solutions which were specific to the problems encountered. For example, solutions included the creation of an Online Discussion Board guide, the incorporation of Gilly Salmon's 5 Stage Model in order to inform the induction session activities with respect to discussion board access, and the use of the Diana Laurillard's Conversational Framework to structure the pedagogy of a module. These were developed in the 'messy' action research environment, where not all transcripts of data were made and analysed. The second stage of analysis was conducted with the benefit of there being no time pressure on producing Data Reduction, Data Display and the drawing of Conclusions. This stage is described in the post-hoc data analysis.

4.5.2 Stage 2: Analysis post data collection

The second analytical stage was conducted post-hoc, at the end of the four action research cycles. Going through the entire data analysis process in two major cycles provided a level of

reflexivity for the researcher [(Oates 2006:293) (Venters 2003:120)]. The researcher was then able to distance himself from the initial processes and examine the data in more detail and where possible introduce a higher level of abstraction. This allowed a detailed and an organised process, which was difficult to implement whilst the researcher was in the research context and under pressure to solve practical issues. More attention was paid to the theoretical value of this work. Therefore the 'messiness' of the real life situation, which was now available in full transcripts, was *post hoc* imposed on the action research to provide the reader with a coherent logical sequence of events resembling more closely Lewin's cyclical model of action research [see Figure 10: Lewin's cyclic model, adapted after: (Burns 2000:445)].

All video tapes and notes of interviews and focus groups were transcribed and formatted to fit the requirements of QSR NVivo qualitative data analysis software. Each file was given a three part name to indicate the action research cycle with which the file was associated, data collection type and the date of the event. The first part of the file name is differentiated by the allocation of C1 – to mean Cycle 1 or C2 – meaning Cycle 2. The second part indicates the type of the transcript, for example if it was a Focus Group with students the abbreviation, 'FG Students' was used, for all interviews the sources are differentiated by Lecturer, Student or Support followed by the coded name in for example 'Lecturer A' or 'Support B'. The final part of the file name uses the date to identify the event date in the format dd/mm/yy. This means that for example, the first file highlighted in the screenshot taken from the QSR NVivo Document Browser (see figure below) 'C1 – FG Students – 120104' denotes that the file belongs to the first cycle of data collection, it is a Students focus group and was collected on the 12th January 2004. Additionally, colour coding was used to aid the differentiation of files: green was used for staff focus groups and blue for student focus groups (see Figure 17: Screenshot taken from QSR NVivo illustrating document explorer view).

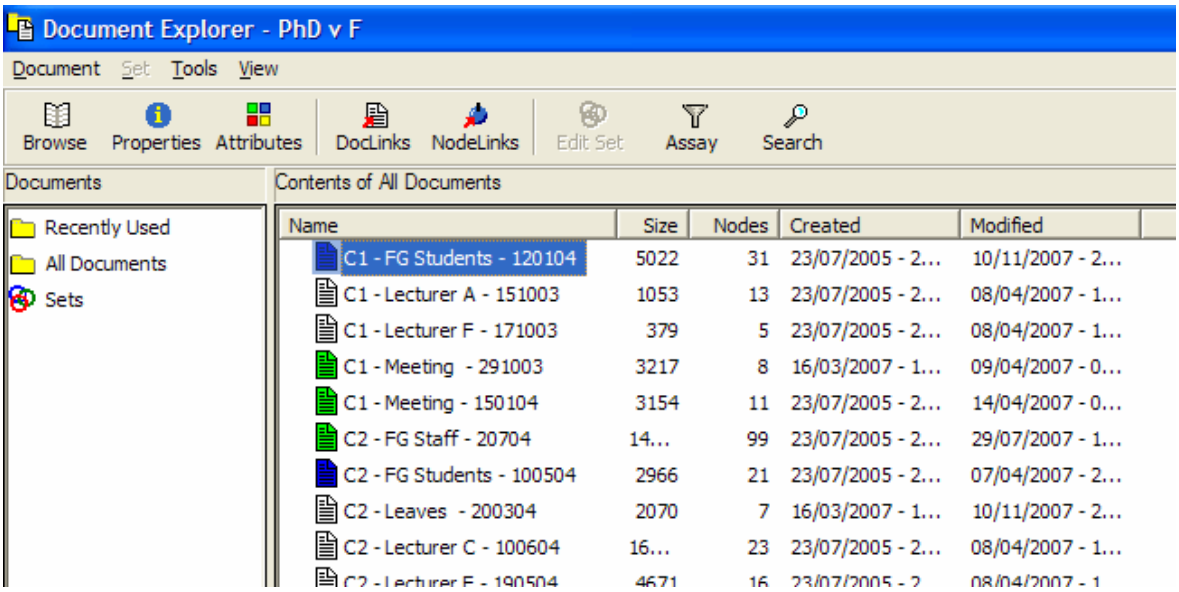

Figure 17: Screenshot taken from QSR NVivo illustrating document explorer view

In QSR NVivo software each file was read through and manually coded (**Data reduction**). Coding essentially meant that sentences, paragraphs, or at times entire sections of transcripts were allocated a certain node. A node is a term used to refer to ideas or keywords that were abstracted from the data. On some occasions, one text passage referred to several nodes, this meant that it was coded twice and might be used to contribute to different themes. For example, one sentence about an observation of a staff discussion board triggered several nodes that related to discussion board moderation issues, 'staff discussion board frustrations', and is also included in a more general node that referred to 'e-Content structure standards'.

The software enabled a view of the data with all relevant nodes being displayed on the right hand side enabling ease of navigation (see

Figure 18: Screenshot of QSR NVivo illustrating document browser view and visible coding). In this figure we have an example of the Document Browser interface, which displays transcript text and relevant nodes. All transcripts were labelled to help navigation, so that the relevant action research cycle number, type of transcript and the date were all part of the document title. For example, in the case of 'C2 – FG Staff – 020704' the transcript refers to the second cycle (C2), it is a staff focus group (FG Staff) and the date of the focus group was second of July 2004 (020704). The coding also allowed the researcher to reflect on his own previous analyses and see them from a more abstract perspective. The emerging nodes, were

coded (**Data reduction**), re-structured and finally graphically represented to illustrate their co-relationships using the data modelling tool (**Data Display**).

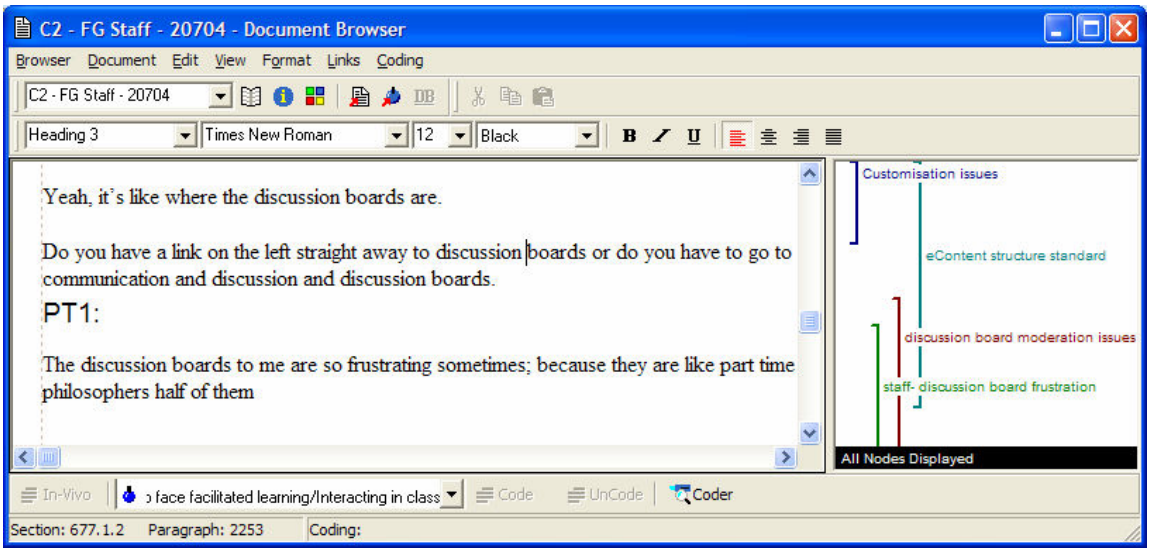

Figure 18: Screenshot of QSR NVivo illustrating document browser view and visible coding

Initially, coding comprised only 'free nodes' – nodes without any logical connection to any others. This inductive approach was adopted to allow data to 'speak' for itself. Cycle by cycle, after coding had taken place, an attempt was made to see any logically interconnected sequences or patterns.

The free nodes were in this way converted to so-called 'tree nodes'. A tree-node is essentially a node that has a logical connection to another node and is therefore contributing to a common theme. Within these trees or 'parent nodes' are branches, which are referred to as 'child nodes' by the software terminology. Generally, instructions for node use were followed from the software help file suggestions:

> *"Free nodes are an unstructured collection of nodes. Use them for ideas which you aren't ready to categorize. Tree nodes are organized into hierarchies, moving from a general category at the top (the parent node) to more specific categories (child nodes). Use them to organize nodes for easy access, like a library catalogue."* (QSR 2002)

The analysis process was firstly undertaken based on an individual action research cycle, identifying the individual issues within each cycle. The same nodes were then added to in subsequent cycles and any new nodes that emerged were created. This process resulted in 211 nodes. The final step was to attempt to abstract these nodes into logically connected 'main' nodes. The result was a six node based concept of blended learning. Using these six, all individual action research cycles were re-formatted in order to group comments based on them. These six themes were selected to be used for all data within the individual action research cycles, to enable the reader to follow their development process. Once completed, the analysis was presented to the author's research supervisor and advisor, who were both involved in the research settings and provided a verification mechanism. Based on their comments another iteration of reduction, display and conclusions was undertaken and documented in this thesis.

Coding walk through example:

The following walk through example will be used to illustrate the analysis process using the QSR NVivo software. The node use for this is "**Need for socialisation of students". Data Reduction:** Reading the transcript of the student focus group, the following passage was coded to indicate that there is a need for student socialisation (see Figure 19: QSR NVivo screenshot illustrating code 'need for socialisation of students).

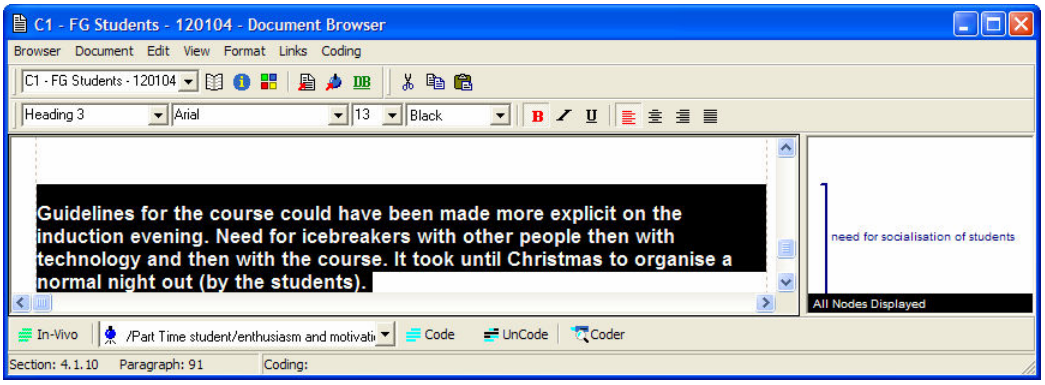

Figure 19: QSR NVivo screenshot illustrating code 'need for socialisation of students'

At this stage the node is a free node and not associated to any other nodes. Reading another passage in the transcript of the staff meeting, a similar statement was made and coded to the

same node (see Figure 20: QSR NVivo screenshot illustrating another code 'need for socialisation of students'):

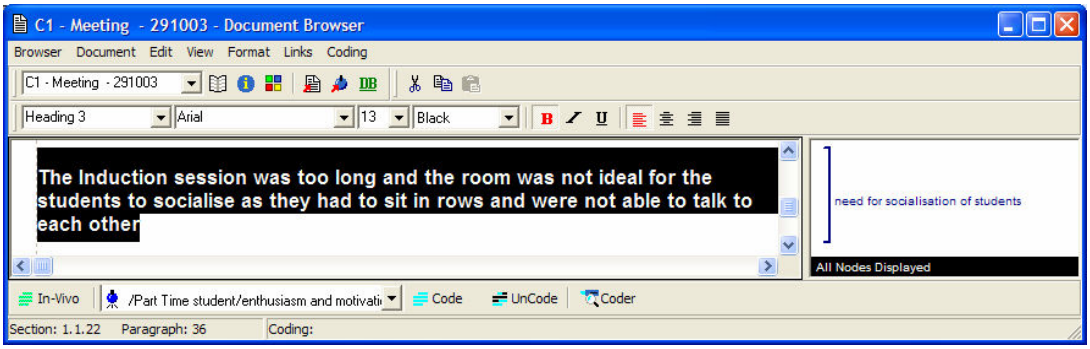

Figure 20: QSR NVivo screenshot illustrating another code 'need for socialisation of students'

A similar process was followed for all documents. For this particular node, a need for socialisation of students, there were 17 documents coded. At this stage all nodes are "free" they are not related to any themes identified in this analysis. At this stage the analysis goes to **Data Display,** by providing logical structures to accommodate all free nodes into themes. Using the Node Explorer, trees are created by dragging the free nodes into trees which represent conceptual themes. Within these trees are branches which were built by logically structuring free nodes. This process was completed several times to see which way best represented the emerging themes. The image below indicates that the need for socialisation of students was initially thought to be related to the 'Course structure' tree. It illustrates a stage where there are 132 free nodes that require allocation with 84 nodes already allocated to trees (see Figure 21: QSR NVivo screenshot illustrating Node Explorer view).

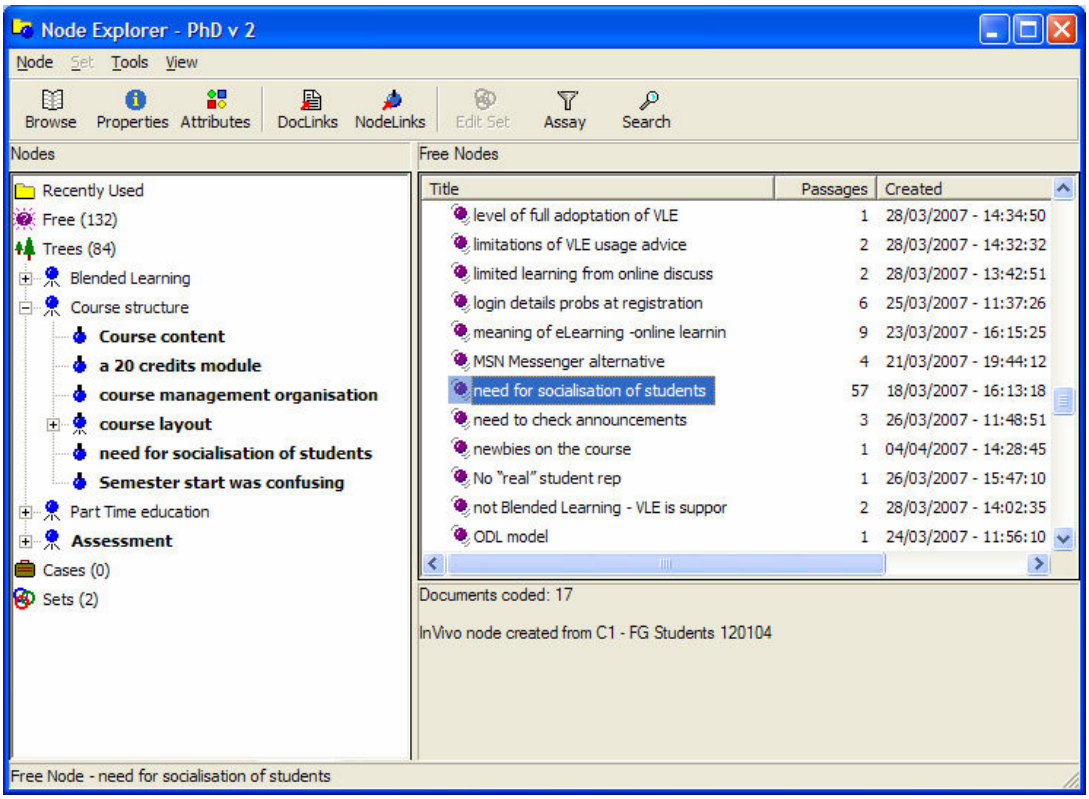

Figure 21: QSR NVivo screenshot illustrating Node Explorer view

The display of the 'Need for socialisation of students' is logically suited to the 'Part-time Student Theme' within the 'Enthusiasm and motivation' branch. There were also some nodes which were on an even lower level, which mentioned activities such as 'going to the pub' etc. – illustrated on the right hand side of the figure below (see Figure 22: QSR NVivo screenshot illustrating tree view of 'need for socialisation of students').

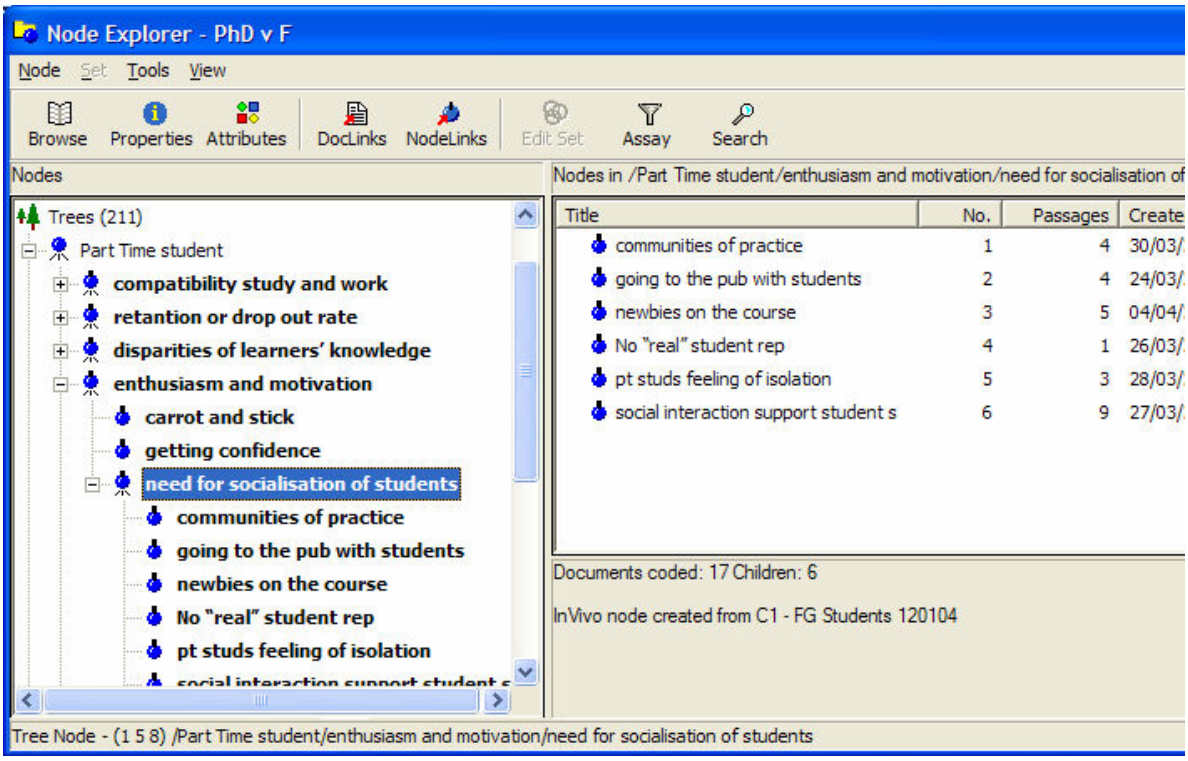

Figure 22: QSR NVivo screenshot illustrating tree view of 'need for socialisation of students'

Using the model explorer, the trees are represented to illustrate their relationships within the discovered themes. The graphical display of the arrangement of logical nodes helps to draw a **Conclusion** on the role of the need for socialisation of students as identified in this research. This data supports views proposed in several theories which emphasise the social aspect of learning (for example: Zone of Proximal Development and Communities of Practice). It is therefore concluded that social interaction is an important factor helping to keep students motivated and increasing their enthusiasm and participation on the programme. From the blended learning programme design point of view, the conclusion is that opportunities for social student interaction must be planned.

The following figure summarises the two levels of analysis undertaken in this study (see Figure 23: Summary of the Two Stages of Data Analysis in This Study). The reduction, display and drawing of conclusions were done five times (once per action research cycle) at the first stage of analysis and once at the second stage.

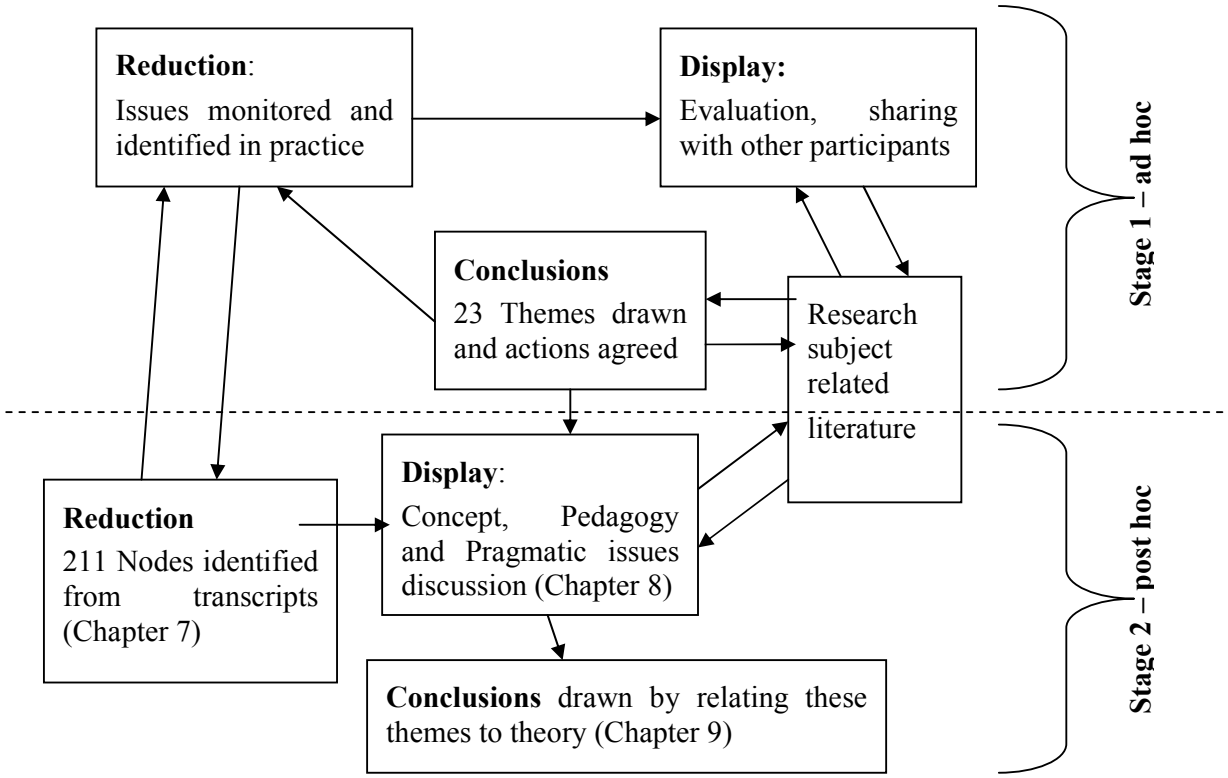

Figure 23: Summary of the Two Stages of Data Analysis in This Study

4.6 Summary

This Chapter has been concerned with the detailed description of the implementation of the research process. The main themes discussed were the implementation of the research paradigm, the research method, the data collection and the data analysis.

To satisfy the interpretive research paradigm adopted for this work, a description of the research settings, the participants and the researcher's background have been outlined in the first section. A general introduction to the participants was given highlighting their different backgrounds. The teaching staff and students were introduced in line with the ethical consent provided, which aimed to disguise their identity.

The implementation of the action research method was discussed drawing on the management of limitations, addressing of research ethics and an outline of the four action research cycles. The limitations as identified from the literature have been addressed. A detailed account was made that represents the mitigation and management of common problems in association with action research. Ethical considerations were outlined in detail, drawing on the consent form and the ethical approval process as stipulated by the University of Salford Ethics committee. This section concluded with the overview of all four action research cycles.

The data collection section of this Chapter focused on the three main data collection processes: observations, focus groups and interviews of which descriptions have been provided. Data was collected subject to the consent form, where possible events were recorded, transcribed and sent to participants for their approval and general records.

The final section of this Chapter has been devoted to the two stages of data analysis. The first stage was conducted whilst the data collection was taking place during action research cycles and draws on all participants' experiences. The second stage of data analysis was done post-hoc once the action research data collection was completed. The data analysis process has undergone a three - stage process of data reduction, data display and the drawing of conclusions and verification. Using transcripts of interviews and focus groups, a data analysis tool (QSR NVivo) has been utilised to code themes. This process was explained and examples of coding were given for illustration purposes.

The next Chapter will provide a detailed description of the first and second action research cycles. These will primarily focus on the implications of blended learning in practice. The subsequent Chapter will examine the latter two action research cycles particularly focusing on the pedagogy aspects.

Chapter 5 Stage 1: action research cycles one and two

5.1 Introduction

The previous Chapter outlined the implementation of the research method. From the interpretive standpoint, explanations of the research setting, the researcher and participants were given. The structure of the research method, the data collection and an explanation of the two levels of analysis were given.

This Chapter will describe the first two action research cycles, which were conducted in the first academic year of this research. The main theme observed in this Chapter is the pragmatic implications of blended learning, as highlighted in Figure 24: Conceptual framework: Chapter 5. This theme is influenced by the following research question: *c) What are the **pragmatic** implications of blended learning?* Building on the previous Chapter, which focused on the process of work undertaken, this and the next Chapter focus on the content of the work undertaken.

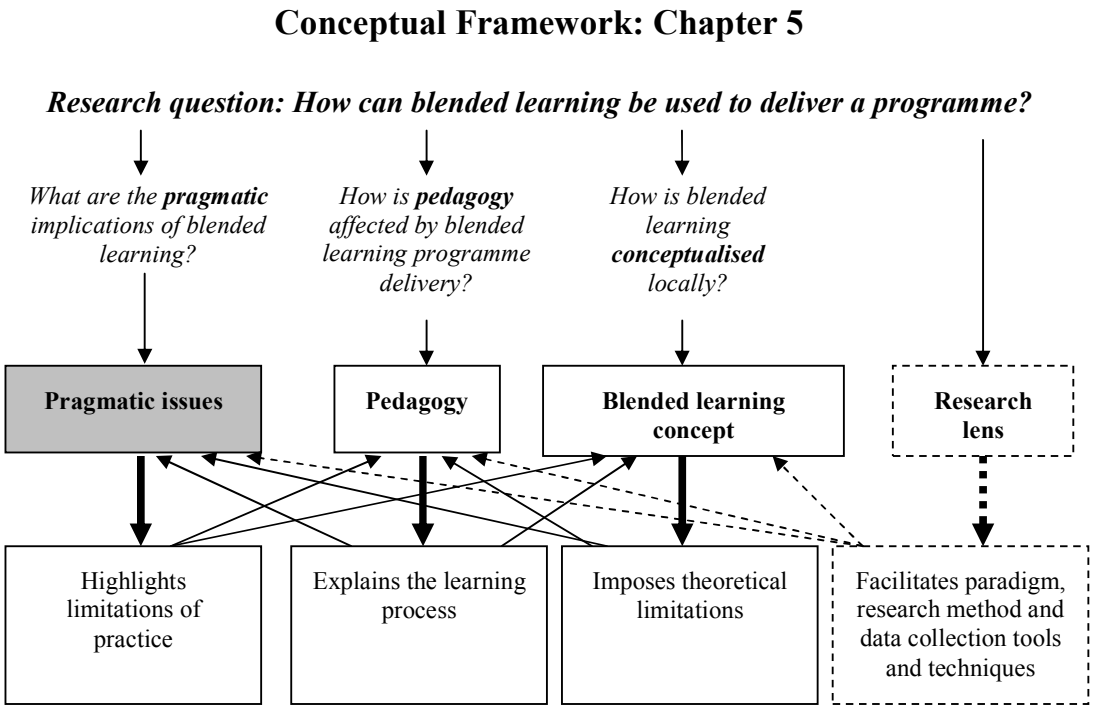

Figure 24: Conceptual framework: Chapter 5

As outlined in the previous Chapter, real life research is far messier than it appears when presented in written format. The traditional stages of action research: diagnosis (evaluation and planning) and therapeutic intervention (implementation and monitoring) are described in detail for each of the two action research cycles. Each action research cycle is subdivided into two sub-sections – 'implementation and monitoring' and 'evaluation and planning'. These highlight the diagnosis of issues to be addressed, an action plan for the improvement of these issues, a description of the implementation and an amended plan for the subsequent action research cycle. The evaluation and planning sub-section will incorporate relevant literature where appropriate.

5.2 First action research cycle

This section is structured around two sub-sections, the first outlining the implementation & monitoring and the second the reflection & planning stages of the first action research cycle. The implementation and monitoring sub-section outlines seven themes that describe the implementation of blended learning. Drawing on the analysis of the node diagram, evaluation

& planning are informed and consequently six themes are used to evaluate and propose actions for the next action research cycle.

5.2.1 Implementation and monitoring

As discussed earlier, the action research commenced once the initial diagnosis and resulting action plan were decided upon. The main issue highlighted by the diagnosis was that the part-time students on the programme were not able to attend sessions during the day. This was a factor in the discontinuation of a day release programme that had previously been available for them, which required attendance one day a week. This meant that a programme that suited the needs of this particular group of students had to be developed (Procter 2003), and thus an evening based programme was developed which would utilise face-to-face and E-facilitated learning in the form of blended learning. The face-to-face sessions were scheduled for the evenings to enable students to come along after work. To maximise flexibility, students were asked to attend the face-to-face sessions only once a week on the University of Salford premises with the rest of the learning and teaching taking place via the Virtual Learning Environment (VLE). The e-Facilitation of learning was enabled through a Blackboard version 6.0 VLE as offered by the University of Salford and by email correspondence (Procter 2003).

The first cycle of action research focused on the first semester of the course, which took place from September 2003 until January 2004. This cycle used the issues and data generated by the two modules: Programming Business Information Systems (PBIS), and Systems Analysis and Design (SAD). Each module was allocated a lecturer and a graduate teaching assistant (GTA). The author was a GTA on the Systems Analysis and Design module. An example of Graduate Teaching Assistants' activities undertaken by the author supporting the SAD module is given in Appendix 10.3.

5.2.1.1 Students and time of attendance

The course attracted predominantly adult learners: 41 students in total. The majority of students were in full time employment with families and other commitments. In several cases these students were admitted on the basis of Accreditation of Prior Learning (APL) rather than the traditional entry requirements such as A Levels. Although some students were self-financing, several were sponsored by their employers. The gender balance was predominantly male.

The mode of course delivery was advertised as blended learning, where students would attend a 3.5-hour class once a week with the other activities delivered via the Blackboard Virtual Learning Environment (VLE). The attendance was always in the evenings between 16:00 and 20:00. The SAD class was generally structured so that in the beginning there was one informal hour where students could interact with their colleagues, the GTAs and the lecturer. This was followed by a formal session, which could be a lecture/ tutorial or practical.

In the first action research cycle, modules were delivered on alternate weeks. This meant that each evening students spent all their time on only one module. For example, one week they had 3.5 hours on SAD and the next they had 3.5 hours of PBIS. Both modules were worth 20 credits. According to the University of Salford guidelines, each credit represents approximately 10 hours study time. Therefore, students were expected to study approximately 400 hours (approximately 200 hours per module) per semester. The semester was divided into 12 teaching weeks, meaning that there were six evening sessions for each module.

5.2.1.2 Learning facilitation

Student learning and teaching was mainly facilitated by four different formats, lectures, practical sessions, tutorials and e-Learning as outlined below. Lectures usually took place in lecture rooms, with the lecturer standing at the front of the class and talking through PowerPoint slides projected on the wall. The lecturing style was predominantly "teacher centred" reflecting associationist ideas as proposed by Herbart. Students were issued with a hard copy of the PowerPoint slides to enable their note making. Any clarifications and examples were elaborated on a white board, where the lecturer, using a white board marker, would draw diagrams and concepts. For example, the lecturer who was observed on the SAD module was experienced in applying systems analysis and design in real life and used many current examples to illustrate the theoretical concepts in practice.

To complement lectures, practical sessions usually took the form of students working in computer labs, for example using a programming language - in the case of PBIS, students used Visual Basic. For the SAD module the chosen software was ARTiSAN, which used Unified Modelling Language for the development of Object Oriented systems. The practical sessions were more 'student centred' where problems were set and students had to solve

these. Usually some basic guidelines were provided on how to operate the software, and students with any difficulties were helped by a member of staff.

Tutorial sessions usually took place in a classroom without computers, where students had a chance to work on a theoretical problem and the lecturer and teaching assistant would circulate and help. Usually this would be in the same room as the lecture room. Similar to practical sessions it was a more "student centred" approach to learning and teaching.

The rest of the time the students interacted using the Blackboard Virtual Learning Environment (VLE), email and telephone. The VLE usually included the contents of the evening sessions in the form of PowerPoint slides, MS Word documents and other activities and resources that directed the students to relevant topics. For example, some links to multiple choice questions were enabled on the recommended text book support site. Several discussion forums were set-up as a substitute for face-to-face interaction. The VLE was the central point of communication, meaning that students had to log in to see any updates at least three times a week.

5.2.1.3 Assessment

Each module had its own assessment structure. Assignments were weighted to give some a greater importance than others. For the SAD module, assessment took place online through an assessed online discussion, individual practical assignments and online multiple choice questions. Students were also asked to produce reports individually and then in groups. The group work was presented to peers and assessors. For the PBIS module, students had an assessed online discussion and several practical assignments. The learning process was concluded by a formal examination that took place on University premises.

5.2.1.4 Course induction

The first evening session of the course was intended to take the form of an induction, where the students were introduced to the tutors, courses and the mode of course delivery. They should also have had a chance to be enrolled on the Virtual Learning Environment, but unfortunately this did not go to plan. The induction session was structured in a way that allowed students to listen to talks from the course tutor, who informed them about progression

and classification of the degree, and individual module lecturers who focused on the generic issues and assessment structure of the individual modules. Teaching assistants were introduced and provided some information on communication options and the anticipated response time to emails (an acknowledgment reply within 48 hours).

In order to be enrolled on the Blackboard Virtual Learning Environment students had to go through a process of network user identification confirmation and logging on to the University of Salford network. Some students forgot to bring their log-in details which were issued to them on the day of registration and therefore were unable to enrol on Blackboard. The other issue was that initially it had been planned that all students would log in and familiarise themselves with the VLE. However, the computer room intended for the session was locked on the evening, and so there was not enough time to go through the features or basics of using the VLE. During the induction a lot of time was wasted walking from the labs to the room and waiting for the technical Blackboard administrator to arrive and introduce Blackboard to the students. Despite this, most of the students were enrolled on the VLE and knew where the lectures would be located in the future.

5.2.1.5 Discussion board support

In the first weeks of the course, the majority of communication with the students was conducted by email, telephone and in some cases in person. It soon became apparent that many questions were repeats and of a generic nature and so had the potential to be of help to the whole class. The GTAs decided to create student guides, which would serve as a point of reference for all. The majority of difficulties addressed in this way were technical and students were able to read some of the responses to others and learn from them. Having received approval from the module tutor, the GTAs created a 'Discussion forum for general technical and administrative issues'. This forum was later renamed 'FAQ' (Frequently Asked Questions) as the original name was lengthy and cumbersome. Some of these questions were related to issues such as how to use electronic assignment submission, view grades and use discussion boards.

Although in the past there had been sporadic use of Blackboard, and most staff had used web pages for the support of teaching and learning, the concept of using a VLE to support a blended learning part-time course was new. The VLE was organised to facilitate a Blackboard

website section for individual modules (i.e. both SAD and PBIS had their own sites). One generic site was created, to be used for communicating programme related information. This generic module is also referred to as an 'umbrella' module, containing information such as "high" level guidelines (e.g. general advice on online communication) and links to forms such as personal mitigation circumstances etc. Also generic discussion boards, such as Virtual Café, FAQ and Discussion with your Student Representative are located within this module.

A non-assessed 'ice-breaker' discussion about fractals, established on the SAD module during the first week of the programme, was very active with some long messages. The message length provoked a student request that messages should be kept short, and that guidelines on the appropriate use of discussion boards be given. The students had not seen the guidelines already provided on Discussion Board Use, although these made no reference to the length of postings. An Instructional Technologists' forum (ITForum) was canvassed for examples of such guidelines and was of some help. Students were reminded of the 'high' level guidelines already available, and were provided with links to three typical guidelines used elsewhere. Meanwhile, assessed discussions commenced on both modules, each module used different assessment criteria that referred to the frequency and quality of postings, but neither made reference to the length or style of postings. This prompted another student email enquiring about the maximum length of a message and another from one student who was overwhelmed by the online discussions, as the content seemed to be very technical and beyond his comprehension.

Assessment of the first discussion board assignment revealed some chaotic message posting. Some students simply started a new thread rather than link to existing threads, whereas others replied to previous postings and provided external links to articles, to support their arguments. Additionally, students started off-topic discussions (e.g. discussions about cars in a forum about programming concepts) within assessed discussions, even though they had a Virtual Café discussion board designated for such off-topic conversations. Based on these observations, the teaching assistants created a set of 'low' level guidelines for discussion board use. These were shared with students for their comments and amended based on their feedback. These guidelines were also shared with the ITForum list server. Subsequent discussions on the list server indicated broad support for the 'low' level guidelines, with some disagreement about posting length and the use of greetings and signatures. It seemed that posting length was liable to vary according to subject, context and individual style.

After an internal consultation, it was decided that the 'low' level and the 'high' level online discussion guidelines needed to be merged into a guidelines framework, since both had useful points. The issue of discussion board guidelines was championed by another member of staff, who was very interested in the developments and her collaboration resulted in a number of outcomes. These included internal staff development sessions, conference (Bell and Heinze 2004a; Bell, Heinze et al. 2004) and journal publications (Bell and Heinze 2004b). An example of the discussion board guidelines that were developed can be found in appendix 10.5 outlining the online discussion guidelines as approved by the teaching and learning committee of the then Information Systems Institute.

5.2.1.6 Assessment on the Systems Analysis and Design module

Assessment on the Systems Analysis and Design module was made up of several elements. Firstly, an un-assessed discussion on the online discussion board was structured around the question: "*What do Fractals have in common with Systems Analysis and Design?*" Students were asked to think of reasons why the fractal was chosen as a module website banner and to share their opinions on the discussion board (see Figure 25: Prompt message).

Prompt message

Current Forum: Why a Fractal Read 87 times

Date: Thu Sep 11 2003 2:55 pm

Subject: Introduction

I have used a fractal as the course banner - anyone any ideas why? What could link fractals and systems analysis/design ?

Also I've attached the uncompressed fractal image for interest.

This is only to try and get us interacting so no need to think too deeply!!

Figure 25: Prompt message[1]

[1] **Please note** that it was decided that staff and student quotations should be given verbatim.

The intention was for students to learn how to interact using a discussion board. The lecturer was active in the first few days replying 14 times to individual points so that the discussion soon grew into a complex hierarchy of posts. Overall 30 messages were posted and the original message was read 87 times – as can be seen from the above figure.

This informal discussion board activity was followed up by an assessed online discussion. Based on the experience gained from the informal fractal discussion, students were divided into groups of eight and nine in order to limit the information overload, which seemed to be an issue where all students participated in one online conversation. Most students did well in this exercise and there was less complexity with the number of messages. This activity was followed by three individual pieces of assessed work on different aspects of the module material.

The final assignment comprised online multiple choice questions (MCQs). This test was developed to provide a summative assessment that referred to all topics taught on the module and allowed students to revisit all concepts and see how they fitted together. The test was set up so that questions were presented in random order and with a time limit of 30 minutes. Students enjoyed the immediacy of the feedback and the provision of their mark at the end of the test. Additionally, one of them commented that it was only at this stage that he realised how all the different topics were interrelated.

5.2.1.7 Assessment on the Programming Business Information Systems module

The first two assessments were online discussions. There were difficulties with the first discussion: students claimed that they were unaware that there was an online discussion set up and they couldn't find it. This resulted in an extension of the hand in deadline being agreed.

There were also three programming portfolios, which the students had to document and then submit their code and documentation for assessment. There were issues with the actual submission of material – the submission was supposed to be digital, where the code and documentation were both submitted via VLE. Because both modules used different ways of submission – one used a digital drop box and the other assignment manager; students were confused about the way the submission worked and were not sure if their work had been submitted or not. A guide was published which outlined the use of both of these facilities.

The final set of marks – 50% - was attributed through the exam. This was a traditional format where students had to attend a venue and write answers to questions using pen and paper. Some of the questions before the exam were dealt with on the general module discussion forum, which was set up for the students to raise issues about exam preparation. Students used the space to chat amongst themselves and to communicate with the teaching assistant. After the exam, students discussed how the exam had gone.

5.2.2 Evaluation and planning

So far this section has outlined the issues of implementation and monitoring and described the first cycle of action research. The following sub-section focuses on primary data collected and its analysis on the first cycle of action research. The figure below depicts a graphical representation of the nodes that emerged from the first cycle of data collection, and their respective sources.

The transcript documents were named, where C1 indicates that it is Action Research Cycle 1 of data collection, followed by the data type where FG stands for Focus Group, and the date on which that data was collected. For example 'C1 – FG Students 120104' means that it is data from the first cycle of research representing a student focus group that was held on the 12th December 2004. The transcript documents are connected with nodes via a line. The line indicates that a particular node was brought up in that particular document. Nodes are graphically represented by blue balls; these are not visible in some cases due to the node groupings. Underneath the individual bullet point is the actual node name, which is preceded by a number. The number of the node will be disregarded at this stage. The representation was analysed on the assumption that if a node was brought up by only one source it is not as important as a node highlighted by several sources. Although it is a simplistic view and not necessarily correct, in the notion of action research it is the group view that is particularly important and therefore it is that which is highlighted in this diagram. As can be seen from Figure 26: Cycle 1 Intersections, there are five primary sources represented as transcribed documents: two meetings transcripts (C1 - meeting – 291003 and C1 – Meeting - 150104), two staff interviews (C1 - Lecturer A – 151003 and C1 – Lecturer F – 171003) and one student focus group (C1 – FG Students 120104).

Cycle 1 Intersections

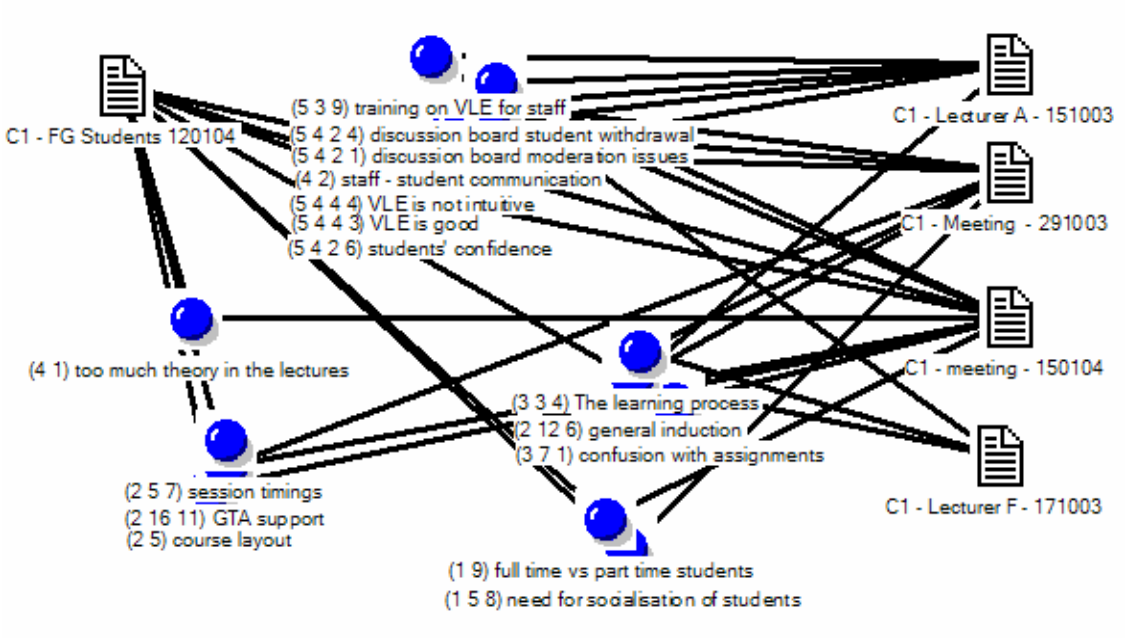

Figure 26: Cycle 1 Intersections

There were a number of different issues highlighted by the first cycle of action research as indicated by Figure 26: Cycle 1 Intersections. Although this figure already represents a reduced number of nodes, in order to further reduce complexity only the six most important issues as perceived by the author are discussed below.

5.2.2.1 Staff training on the Virtual Learning Environment

Their training on the Virtual Learning Environment (VLE) was perceived as one of the main issues of concern to members of staff. This is evidenced by the confusion that arose around the structuring of the individual module sites and the use of the tools on Blackboard. One particular example is the use of tools for students to submit electronic assessment. The two tools available within Blackboard are the Digital Drop Box and the Assignment Manager. Both modules used a different tool, which caused confusion amongst the students. The following are some of the comments that came out of staff interviews in relation to the training issue:

> *"No training on VLE was provided… The trainers/supports were not very good"* C1 - Lecturer A - 151003

Limited knowledge of Blackboard use was also evident when populating it with electronic material and the format that should be utilised:

> *"Not clear how to convert the material and place it on Blackboard"* C1 - Lecturer A - 151003

The final related issue is the actual location of necessary tools and features on Blackboard, which makes it difficult for staff to locate the relevant tool:

> *"Main problem [is that] I don't know where what is on Blackboard"* C1 - Lecturer F – 171003

The staff training issues which were highlighted in this cycle are in line with the literature, which highlights the problems with "inadequate access to staff development and training" and "lack of knowledge and skills" (Shannon and Doube 2004:117). Although these authors' work was undertaken in Australia, the training and knowledge of learning technologies appear to be common problems. This again highlights the need for this research, which emphasises the importance of staff training. The following action plan was devised to help new staff with their training on Blackboard VLE.

5.2.2.2 Discussion board moderation

One of the main communication tools used within Blackboard was the discussion board; both modules utilised online discussions for assessment purposes. It was felt by some lecturers that although the discussion boards facilitated interaction, they also highlighted the differences in students' knowledge and consequently had a negative effect on some:

> *"Some excellent contributions have frightened less knowledgeable students."* C1 - Lecturer A – 151003

> *"In some cases experienced students used the discussion forum as a "showing off" exercise."* C1 - Meeting – 150104

This is supported by the following email from a student:

> *"Hi Guys, I have a quick question/concern that has been in my head recently. I have just started working on this course properly due to personal circumstances and it has suddenly occurred to me whilst viewing the posts on the discussion boards that the majority of the class seem to have had vast experience in IT before coming onto the course. This is obviously a good thing in a way because I can learn so much from the other guys. The concern I have is that at this early stage I feel even more behind than I did because the level of posts is, to be honest, beyond my current means of comprehension.*
>
> *Should I be worried about the level at which postings are going to be marked and will the obvious knowledge and experience of many have an effect on the expectancy? Any advice that you can give me on this would really help as I feel pretty inadequate at the moment.*
> *Thanks again [Student name]"* C1 - Student's email - 91003

This exemplifies the drawback of assessed online discussions, which allow students who are very knowledgeable to communicate all their ideas. It raises the issue of moderation and guidelines necessary to manage the discussion. Assessing online discussions is advantageous (Field 2005), however, it needs to be done with care and good moderation (Heinze and Procter 2004). It is generally acknowledged that online discussion boards can be a place for flaming – where individuals can post offensive messages insulting others or organisations (Reinig, Briggs et al. 1997). Perhaps because the message boards were closely monitored by the Graduate Teaching Assistants and lecturers, the issue of flaming did not appear in this data. However, the differences in participants' knowledge which become evident in online discussions have caused some negative effects and are not as widely acknowledged in the literature (Heinze and Procter 2004).

In addition to the moderation of assessed discussions there was also the issue of the management and use of discussion boards. A new discussion board was created for every new discussion, resulting in a number of these which might only have a couple of messages each. It was decided that this was not the most efficient way of using these forums and that only three should remain, those related to technical and admin issues, Virtual Café and Student Representative's virtual desk. Discussion forums proved popular and attracted high numbers of messages. This had a negative effect in that too many threads were slowing down the loading of discussion board pages, highlighting the need for archiving and where necessary locking the threads of an assessed discussion. The management of the content of discussion boards was further improved by dividing the students into smaller, more manageable groups to improve their effectiveness:

> *"[a lecturer] reported that the first discussion board exercise on Fractals was an indication of how difficult it is to manage over 30 students in one online discussion. This was then integrated into the assessed online group discussion, where students were working in groups of 8 to 9. In groups the discussion boards were more effective and easier to oversee. …."* C1 - Meeting – 150104

The benefits of small online groups is also advocated by other research projects [for example (Wegerif 1998)]. A group size of under ten students is considered reasonable for assessed online discussions (Mason 2001). The data gathered on online collaboration is aligned to the points proposed by others, in particular the diversity of knowledge of mature part-time students. The issue of student numbers allocated to a particular online discussion has to strike a balance between too many contributors and too few. On the one hand, readers are easily overwhelmed by the number of posts, making messages very difficult to follow and on the other there may be only a couple of people posting and their messages might not be frequent enough to keep the conversation going. The sustainability of online discussion forums depends on a critical mass (Hildreth and Kimble 2004; Shrivastava 1999). Critical mass in this context refers to a certain number of individuals who frequently contribute to the online discussion boards to share their problems and solutions. This helps 'lurkers' – individuals who predominantly only read messages but don't post, and those who actively engage in online conversations to learn from others. Assessed online discussions can actually eliminate lurkers since individual marks are assigned to their messages, not only their reading of others' posts. The resulting action plan was to implement the discussion board guidelines in the second action research cycle.

5.2.2.3 Impact of the Virtual Learning Environment

The impact of the Blackboard VLE was mixed, some students felt that generally:

> *"Virtual Learning Environment is good"* C1 - FG Students - 120104

However, others provided some constructive criticism on the complexity of navigation:

> *"Blackboard is not intuitive - three clicks rule not observed"* C1 - FG Students - 120104

In relation to the individual modules, students were dissatisfied with the inconsistency in the use of the VLE:

> *"There is no consistency in the module layouts on Blackboard"* C1 - FG Students - 120104

These issues were discussed by staff in detail, however, a high level of consistency was not operable due to different lecturers' needs and expectations:

> *"In general it will be up to the lecturers to decide what structure to use and how to run their module. The consistent model navigation structure as proposed by GTA's has limitations such as: not all lecturers will be using discussion boards and group pages, however one could keep it as a point of reference."* C1 - Meeting – 150104

Overall the positive impact of the VLE was acknowledged by staff and students. On the days when the VLE was down due to technical server problems, there were a number of complaints about the down time. The following comment highlights the issue of glitches and the complementary assessment of Blackboard's potential:

> *"Blackboard is a very powerful e-learning system (with some glitches)"* C1 - Lecturer A – 151003

This supports the view that the University of Salford was becoming proficient in supporting the Virtual Learning Environment. From the users' perspective, (in this case staff and students), the Blackboard facilitated VLE was offering all the necessary tools, and was similar to other higher education institutions identified in the literature review [see (Britain and Liber 2004; Paulsen 2003)]. All five learning related purposes were fulfilled within the given environment: [1) Publication, Information dissemination; 2) Communication; 3) Collaboration; 4) Information and resource handling; 5) Specific for teaching and learning purposes] as highlighted in the work of (Collis and Moonen 2001). For example, publication was facilitated by allowing staff to create online folders which could contain electronic versions of the PowerPoint slides used for the lecture, MS Word handouts instructions, link to external websites etc. The action plan for the next cycle of action research would therefore attempt a harmonisation of the VLE for the two new modules on the programme.

5.2.2.4 Staff – student communication

Staff and students have been exposed to multiple communication media on the course. The conventional face-to-face sessions, telephone and email were complemented by specific functionality through Blackboard. This took the form of electronic announcements presented

to a student on the home page of a module, virtual classrooms (interactions that allowed synchronous communication online) and discussion boards (asynchronous communication).

Initially, it was felt that at the beginning of the face-to-face session it would be useful to have an informal discussion, where staff and students would have an opportunity to interact, ask questions and discuss the learning progress. However, not all staff members felt that an informal session was useful, with one lecturer noting that the first hour was a difficult time to fill the space where students did not interact as intended:

"The question hour was not utilised properly - silent time" C1 - Lecturer A – 151003

Communication between staff and students emerged as one of the main areas of complication on the course (Heinze and Procter 2004). To become more efficient in replying to similar electronic queries, a decision was taken that if replies could benefit others they should be communicated to them too. For example, in the case of an email reply from a GTA to a student, the lecturer would ideally be copied into the reply and in the case of other students being able to benefit from a similar reply, that would either be placed on the relevant discussion board or in the announcements.

The following figure highlights the four main channels of communication utilised on the course: Discussion Boards, E-Mail, Telephone, and face-to-face session (see Figure 27: Communication channels hierarchy). These are arranged based on their efficiency and efficacy.

As can be seen, Discussion Boards are perceived as relatively efficient in communicating messages to all participants and facilitating a structure for a long conversation, but least effective when dealing with sensitive or contentious issues. On the other hand face-to-face sessions offer a 'rich' (Daft and Lengel 1984) means of communication, where body language, and facial expressions can be used to elicit immediate feedback and provide an opportunity to clarify issues if misunderstandings arise (Heinze and Procter 2004). There are some things which can increase the effectiveness of online interaction and promote instructional immediacy, the 'increase of the psychological closeness between teachers and students' (Gorham 1998; Hutchins 2003), such as the use of humour, addressing students by their names, use of emote icons etc (Bell and Heinze 2004b).

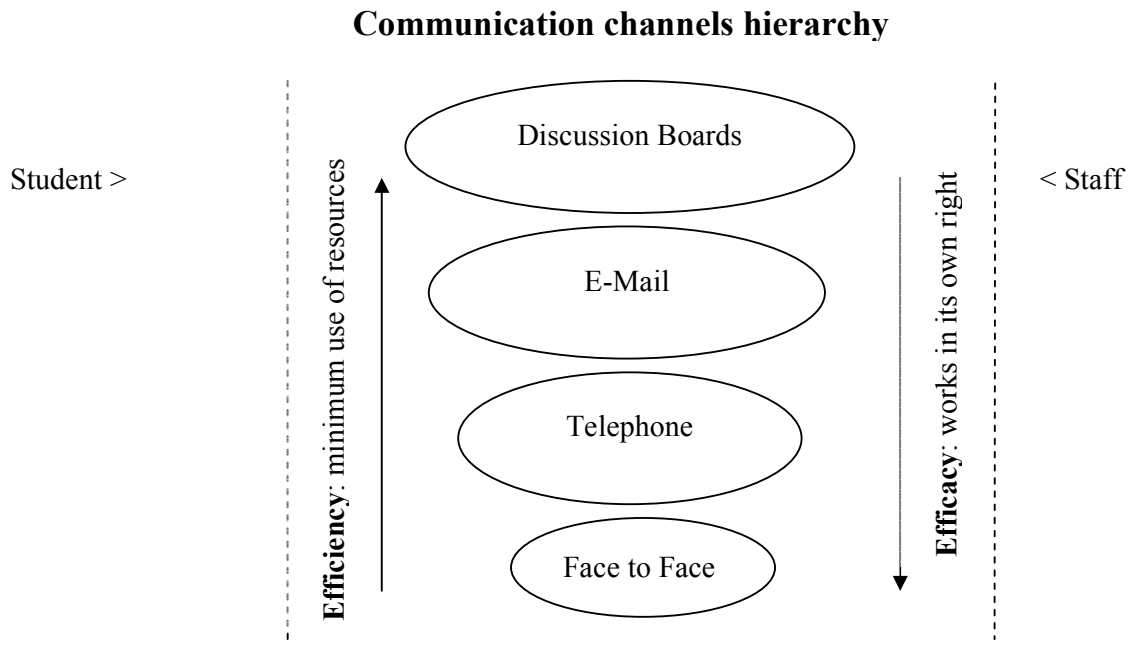

Figure 27: Communication channels hierarchy

The action planning for the subsequent cycle meant that the new staff on the programme would be informed of the communication difficulties experienced in the first cycle.

5.2.2.5 Graduate Teaching Assistants' Support

The concept of GTA support was another new element introduced at the same time as this course. There were no particular guidelines on how the interaction between the lecturer and the GTA should operate, therefore each module was interpreted by the lecturer and the GTA concerned. However, certain GTA tasks were perceived as controversial and were not resolved during the first cycle:

> *"The responsibility of marking has to be agreed between the individual lecturer and the teaching assistant"* C1 - Meeting - 291003

There was one occasion when a lecturer was ill and therefore not able to make the evening session. A decision was made to cancel the session and the GTA was asked to attend the session and notify any student who had not read the cancellation notice. In retrospect, it was decided, (in one of the meetings), that this was not a good use of time and that the GTAs

should be given more opportunities to improvise the time slot with some pre-arranged activities:

> *"In the case of sickness of a lecturer the GTAs are going to improvise the time slot, according to schedule"* C1 - Meeting – 150104

As stated, the introduction of Graduate Teaching Assistants coincided with the introduction of the new degree. This resulted in new activities and new roles which inevitably were interpreted in different ways by the staff and the GTAs themselves. The inconsistencies of GTA use are evident in other institutions and departments (Prieto and Meyers 1999), which highlighted the need for negotiation and clarification of the role. The evaluation of this first cycle data suggests that an action plan for the subsequent cycle should include a negotiation of the GTA support duties with the new module tutors.

5.2.2.6 Programme layout: Session timings

The programme layout was structured so that two modules ran in each semester and their operation was negotiated by the two lecturers who were delivering them. The structure agreed was that one module would run for the entire evening one week and the other would run the next week, alternating to provide six four hour sessions per module in the twelve weeks of teaching per semester. Some students were not very happy with this "alternative weeks" structure and felt that two modules could be covered every week and that this would help them in their learning:

> *"Two hours (modules) each week as more of the subjects can be covered and more in-depth learning achieved"* C1 - FG Students - 120104

Others disagreed and felt that it would be more difficult to concentrate on "two modules per evening":

> *"Difficult to concentrate on 2 parallel running modules at once"* C1 - FG Students - 120104

A third option "block structure" was proposed which would utilise the first half of the semester entirely for one module and the second half for the other module:

> *"Sequence of the course alternate weeks: there is a feeling that a block structure is preferable (for those not being able to get in at 4:30pm)"* C1 - FG Students – 120104

At the staff meetings these formats were discussed and an alternating 'two modules per evening' delivery structure was agreed upon for the next cycle:

> *"It was agreed to start the first session at 4:30 pm for 2 hours and then the second session from 6:30 pm to 8:30pm. These can alternate so that those students who can't always make the first session can at least have a chance the alternate week. If the session is starting in the first slot it is hoped that it will be "back"-loaded so that the main session takes part in the second hour of the time slot. It is felt that it is not fair to those students who come early if they have to wait for others to arrive."* C1 - Meeting - 150104

The resulting action plan for the subsequent action research cycle was to incorporate this change and consequently attempt delivery of two sessions per evening.

5.3 Second action research cycle

So far this Chapter has outlined and discussed the first action research cycle which was concerned with the implementation of two modules from September 2003 until January 2004. The implementation of blended learning involved the use of face-to-face sessions and the Blackboard Virtual Learning Environment in order to suit the needs of part-time students. This meant that face-to-face contact was reduced (when compared to the day release programme) and a number of activities were undertaken online, including assessed online discussions, collaborative online assignments and electronic assignment submission, all facilitated using the Blackboard VLE.

The reflections upon the first cycle of action research informed an action plan for the second cycle. The main actions for the second cycle were therefore to train new staff, utilise discussion board guidelines to improve discussion board moderation, harmonise the use of the VLE, optimise staff student communication, negotiate GTA support and to amend the programme delivery structure to two modules being taught per evening session. The remainder of the key features of the first action research cycle is outlined in the table below (Table 17: Summary of the first action research cycle).

Summary of the first action research cycle	
Implementation & Monitoring	Part-time students need more flexibility Design the programme utilising blended learning New course structure with one evening per week attendance Two 20 credit modules per semester Utilisation of Virtual Learning Environment – Blackboard
Evaluation & Planning	Training of new staff Utilise discussion board guidelines Harmonise use of VLE Optimise staff – student communication Negotiate GTA Support Implement two sessions per evening

Table 17: Summary of the first action research cycle

The description of the second action research cycle is subdivided into two general sections: firstly the implementation & monitoring are outlined and then the evaluation & planning.

5.3.1 Implementation and monitoring

The second cycle focuses on the months from February 2004 until June 2004. The modules taught were Management Business Operations (MBO) and Visual Programming 1 (VP1). There was a decrease in student numbers compared to September 2003. The average attendance in the evening sessions was about 22 students (out of 41 registered in September).

The MBO module used continuous assessment in the form of five assignments, each about two pages long, which were to be submitted every fortnight. The rationale was that this made students focus continually on studying, learning through continuous engagement with the material and undertaking necessary homework. It was anticipated that where students experienced problems, they would use the evening sessions to gain help and ask questions prior to the exam, thus having a better chance of learning and retaining the knowledge long term. The continuous assessment contributed 50% of the overall module mark and the other 50% was an exam.

In the case of VP1, the module was assessed through a programming portfolio where students were asked to create a series of computer programs and document these. These represented different types of coding routines throughout the time of the module and were submitted at the end of the module. This was the only form of assessment and represented 100% of the module mark.

5.3.1.1 Training of new staff

The two new members of staff on the programme benefited from the help of the GTAs and the participation in meetings with lecturers who had experienced the modules in the first semester (first cycle of this research). The training issue persisted and is therefore discussed in the evaluation and reflection section of this cycle in more detail.

5.3.1.2 Utilisation of discussion board guidelines

The discussion board guidelines were publicised from the first semester and students were aware of them. The majority of messages were module related support queries and were used as a means of communication between staff and students. There were some other issues that emerged as a result of message board collaboration, which are discussed in the evaluation and reflection section of this cycle.

5.3.1.3 Harmonisation of the use of the Virtual Learning Environment

The attempted standardisation of the VLE did not go as planned since both modules still had a different navigation structure. On one of the modules amendments were only implemented as a result of student requests. For example, a student asked for a direct link to be created to the discussion board from the left hand side navigation bar of the module, whereas the other module still required clicking on: Student Tools > Communication > Discussion Boards.

5.3.1.4 Optimisation of staff – student communication

GTAs filtered emails and supported the discussion boards. Messages benefiting all students on the course were posted on the discussion boards and emails where appropriate were copied to the lecturer or amongst GTAs. The GTAs were expected to use the discussion boards more

frequently and therefore when certain messages were of potential interest to staff an email alerting them of the message location was sent.

5.3.1.5 Negotiation of Graduate Teaching Assistants' support

The two GTAs were primarily used for discussion board support and any email correspondence. In particular in the Visual Programming module the GTA was heavily involved in the practical sessions supporting the lab work. Several students arranged individual meetings to catch up with their assignments and get some support with their work.

5.3.1.6 Implementation of two sessions per evening

The alternating 'two modules per evening' structure was implemented as planned and did not receive any negative remarks from students. Two modules were therefore covered each week. To accommodate those students who came late and those who left early, the order of the modules alternated every week. This meant that one week it was module A starting early (followed by module B) and the next vice versa.

5.3.2 Evaluation and planning

As explained in the first action research cycle, a node diagram was used to illustrate the first level of data reduction. Only the nodes that were highlighted by at least two sources were perceived as significant and therefore depicted here (see Figure 28: Cycle 2 Intersections). As can be seen in the node diagram, there was one student focus group, one staff focus group and three lecturers who took part in the interviews. An additional source was used in this cycle which represented the student leavers from the programme. This provided information on some of the problematic issues of the programme.

Cycle 2 Intersections

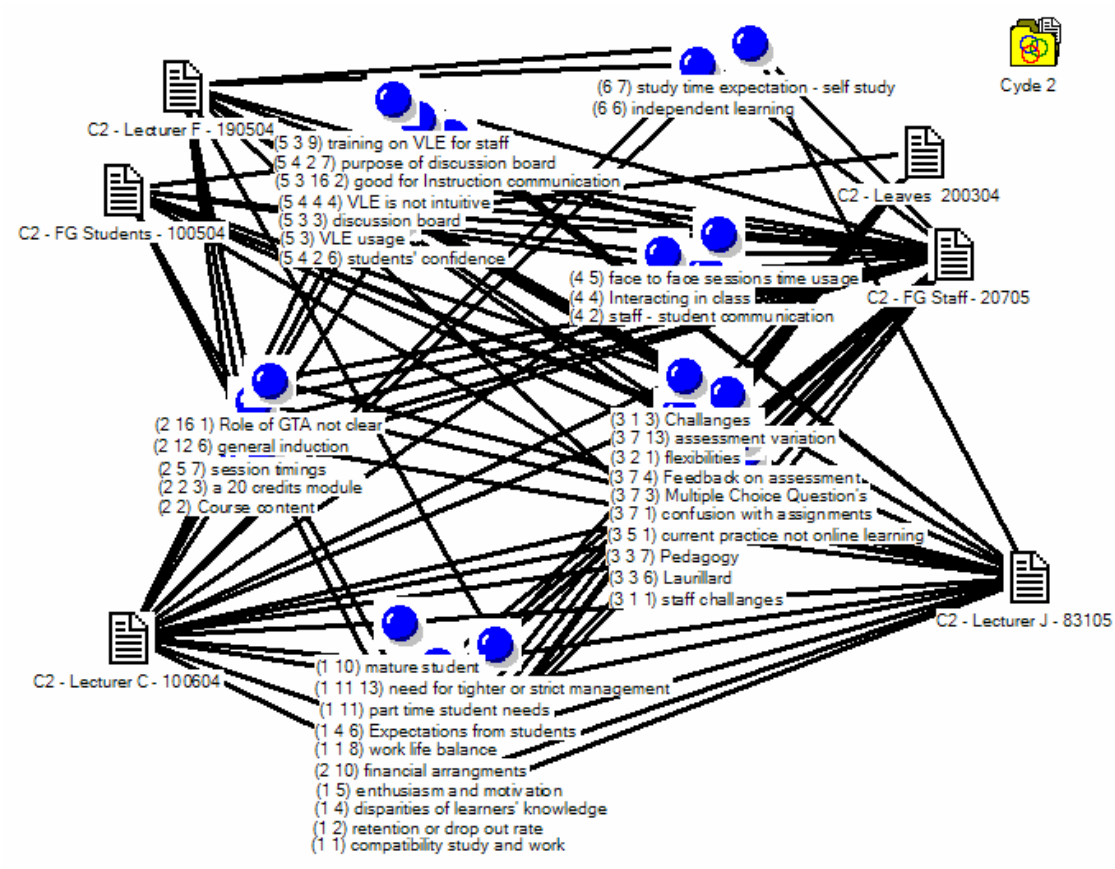

Figure 28: Cycle 2 Intersections

As with the previous action research cycle, six main themes are drawn out of the data analysis in order to simplify and focus the discussion. These six themes are consequently discussed in turn, relating the data to the literature where appropriate and deciding upon necessary actions for the next action research cycle.

5.3.2.1 Staff training on the Virtual Learning Environment

Staff training on the Virtual Learning Environment remained an issue after the second cycle of action research. Partially, this was because new lecturers were involved in teaching and only the GTAs remained supporting the same course. One member of staff was concerned with the functionality provided by the Blackboard VLE and the way that this should be introduced:

> *"I talked to [Name] a bit who used it and she was just like well … give yourself a bit of breathing space. Give yourself a chance to get familiar with it, you know, you can't turn something off once the students are aware it's there, you can introduce something new."* C2 - FG Staff – 20704

Here we can see the learning process and the coping strategy of simplification, which results in a lengthy learning curve. This allowed the participants to experiment with some features within Blackboard and to learn by engaging with only a selected few. Several participants who experienced the Blackboard training sessions, facilitated by the University of Salford staff development team, expressed their dissatisfaction. An alternative solution for staff training was discussed and it was proposed to use an experience based approach using previous cycles of this action research:

> *"…it would be very helpful if [GTAs] could just do a you know 'the following features have proven useful to lecturers over the first year'. Not just how to do them but these are the sorts of things that have proved useful and if you want advice on any of these features then contact us. You know they can be assessment submission, use of group area, just a one liner…."* C2 - FG Staff – 20704

The consensus amongst the participating staff was supportive of such a guide. Additionally, it was suggested to encourage new lecturers to access the previous courses and allow them to talk to each other and get support. This guide is outlined in Appendix 10.6. In addition to staff

information, it was also used to create a student induction guide which incorporated most of the issues given to staff and outlined general tools utilised on the course. The staff development approach adopted by the programme team resembled that of experiential learning (Kolb 1984) where experiences were reflected upon in a group discussion and lessons shared amongst the team. The action research framework provided a learning mechanism which was based on the views of all stakeholders and allowed individual lecturers to take actions on their own modules. The GTAs also learned from this process by negotiating individual staff requirements and needs as identified by the students. The consequence of this evaluation was that the issue of staff training on the VLE remained current and was therefore added to the action plan of the next action research cycle.

5.3.2.2 Discussion board moderation

Discussion board moderation continued to cause concern to staff involved in the second cycle. It was recognised that quick feedback was important (Hara and Kling 1999). The issues that were particularly emphasised this time were the speed of reply to messages, message content and motivation to use discussion boards. One case of reply speed is illustrated by the following comment from a member of staff:

> *"In our first session, I gave them all a card I said you can phone me 24 hours a day if you want. I got one feedback, I answered somebody's message on the discussion board at 10 past 1 in the morning, he asked a question at 10 past 1 in the morning, I answered it at 11 minutes past, and I sent one back saying yeah, and I am in France as well."* C2 - FG Staff – 20704

The above example illustrates an incident that has the potential of setting a precedent. Because the students experienced one way of interaction in the first couple of modules, this set a benchmark in their expectations of speed of replies to discussion board messages. The next issue regarding moderation is the content of messages being discussed by the students and the amount of irrelevant messages being posted:

> *"The discussion boards to me are so frustrating sometimes; because they are like part-time philosophers half of them… with some of the [stuff] they come up with… one query on what is a variable or something and then you get about fifty threads on useless [stuff]."* C2 - FG Staff – 20704

Discussion board moderation became more generic in some interchanges where staff felt that discussion boards were a useful tool. However, individual opinions about the use of discussion boards were also divided, in particular their use as general support for non-assessed discussion:

> *"…Personally I would be reluctant to use discussion boards for assessment purposes. …When I used discussion boards in the past with Blackboard it is striking that a few people were using it extensively and the majority don't use them at all or they only do if you force them, if you tell them that they get 5 marks if they do or something like that. I am not really convinced of the usefulness of that. I think if you have the luxury of the face-to-face session that is when you want to have a discussion."* C2 - Lecturer C – 100604

Because this course is blended, the interaction opportunities in the face-to-face session exist as well as those on the online discussion board. Due to the experience in the first cycle of action research, which demonstrated some negative effects of discussion boards, a more sceptical perception was adopted. In particular, the 5 Stage Model (Salmon 2004) provides a perfect illustration of the use of online interaction which is somewhat idealised in that learning progresses with the time that the students spend online. However, our data suggests that whilst it is useful to think about the 5 Stage Model (Salmon 2004) in terms of five perfectly sequential stages: 1) Access and motivation stages followed on by the 2) Online socialisation and 3) Information Exchange and 4) Knowledge construction and 5) Development, it does not necessarily happen in reality. This might be due to the nature of the blended learning environment where students have the opportunity to ask questions in the face-to-face session as well as online. The issue of discussion board moderation in the second action research cycle has evolved from the issues raised in the first cycle, and validates its currency in the action plan for the next cycle.

5.3.2.3 Student induction

Although the student induction had taken place before the second action research cycle, it was now the time, before the third cycle, to actually decide on certain actions. It was found in the first cycle that the induction was not as effective as it could have been and therefore an extensive discussion took place to decide on the best way to approach it and improve it for the forthcoming academic year. It was decided to approach the induction process over a longer period of time: starting on registration night and ending with the end of the first module.

Other issues raised were the content of the induction and the importance of time for Blackboard training:

> *"I think that this is something that is fundamental about the Blackboard induction evening session. Really I would like to have a proper session at least one hour with students where we go through certain things in Blackboard"* C2 - FG Staff – 20704

It was agreed that there would be two sessions: one focusing on the registration of the students, where they have to get their 'yellow sheets' and login to the university computer network; and one during the induction evening where they would have to follow a Blackboard induction guide.

Other participants were also concerned with the clarification of student and staff roles, since they felt that mature students were expecting to be trained in higher education rather than to develop individual learning skills:

> *"… there are two things: changing tutor roles and changing student roles. Perhaps we should mention in the induction, because they do have expectations from when they were back in school of what the student and what the teacher should do. They are sort of passive, it takes them a while to learn that they have got to be active rather than passive. They can learn from group work and from each other, rather than seeing the tutor or the lecturer as a purveyor of all knowledge. I think we should include some discussion of that in the induction."* C2 - FG Staff – 20704

The e-Moderating model (Salmon 2004) provided some help in structuring the induction session. The first stage of the model emphasises the need to establish access and motivation for all students who have just enrolled on the programme. Whilst this was attempted in the first induction session, it did not succeed due to infrastructural issues which resulted in some students leaving the induction without having accessed the system. Missing this first crucial stage resulted in a number of disappointed students and had a knock on effect on the subsequent online assessment. The plan for the new induction session was to have all accounts validated at the registration session, so that students were less likely to miss the induction task which asked them to participate in a simple online discussion activity of introducing themselves and sharing with others what they wanted to achieve from the course. In essence the first two stages of the e-Moderation model were fast forwarded so that stage 3 Information Exchange could commence.

Since the third action research cycle would encapsulate the induction of a new cohort of students, who would need to go through the induction process, it was felt to be important to add the issue of student induction to the action plan. Building on the experience and the learning from the theory gained in the first year, a number of improvements could be achieved.

5.3.2.4 Disparities of learners' knowledge

Significant knowledge differences were highlighted as a characteristic of part-time students. This was recognised by students in the first action research cycle whilst conducting assessed discussion board contributions.

> *"What me and [Name] did, was that for the first assignment we did a discussion group and what happened was that there were some of the cocky buggers that put up massive great responses and they terrified people."* C2 - FG Staff – 20704

This posed a greater issue around assessment and had a potentially negative effect on less knowledgeable students, reducing their confidence. The other related issue was whether there was a need for face-to-face class attendance by those who were already familiar with the content:

> *"This is what I did because they were coming to me with some heavy duty stuff so I said that you don't have to come for the next two weeks because we will be keeping it on the basic level."* C2 - FG Staff – 20704

The negative effect of the disparity of knowledge was evident in the leaving note of one student:

> *"Due to recent events in my personal life and the frustration of not being able to connect to the Internet at an earlier date, I have decided not to return to the course this year. I have already achieved an HNC in BIT but seeing what my fellow students were contributing online with all their experience in IT where mine is mainly educational based, quite frankly, scared me and made me realise that I could be letting my "team" down."* C2 - Leaves – 200304

This suggests that some students felt uncomfortable with interacting on the discussion boards where the knowledge of their class mates discriminated against some of them. It is reasonable to expect that mature students would have greater differences in their knowledge, based on the

differences in their engagement in educational activities (and the consequent Zone of Proximal Development differences) up until they enrolled on the course. These differences will be visible in the face-to-face session as well as online. However, whereas in the face-to-face session students had the opportunity to see others who might feel similar, they didn't have that option online and hence had to 'worry' about their experience on their own. Other studies have identified issues of emotions and associated anxieties experienced by part-time mature students (O'Regan 2003). The extreme forms of behaviour triggered by the online experience in the study undertaken by Kerry O'Regan demonstrate a similar pattern to this research, where one student was considering leaving the programme. In this research unfortunately the student left. O'Regan quotes Russell who relates learning styles and the level of the individual's acceptance of technology as the main barrier or enabler for online facilitated learning:

> *'individual differences in learning styles dictate that technology will facilitate learning for some, but will probably inhibit learning for others'* (O'Regan 2003:81)

Based on this evaluation, the action plan for the next action research cycle would include the disparity of knowledge amongst learners.

5.3.2.5 Pedagogy

The introduction of blended learning sparked a discussion about the pedagogical beliefs adopted for the programme:

> *"Well it just doesn't happen in terms of full time education, the word pedagogy is a very new one really… it is certainly something that hasn't been considered as important i.e.: to consider how students learn. But we are now trying to implement a different learning-teaching model, and it is becoming clear that we probably should have discussed as a group how the learning is going to be achieved given the resource and the time and the tools we have got."* C2 - Lecturer C – 100604

One particular pedagogic theory, which was considered relevant to blended learning, was the Conversational Framework and as this was discussed it became clear that the familiarity of participants with this framework varied:

> *"Right, I have never heard of this person [meaning Diana Laurillard]. But I am certainly familiar with Kolb's learning cycle, yes it is absolutely essential for part-*

time students but in many ways it is fairly generic for all students." C2 - Lecturer J – 83105

Similar responses of unfamiliarity and confusion were echoed by other participants. Yet others were more positive about the use of a theory to underpin the structure of the programme and highlighted an issue which is related to staff development discussed previously.

> *"I think that we have probably underestimated the importance of some sort of theoretical grounding for the blended learning we are using, in hindsight now. And what I mean by that is I don't mean that everyone lecturing on it should have a great big long course on it sort of two days long on learning theory and obviously Laurillard is a key figure in that. But we started this course a year ago and I think now in hindsight it would have been quite helpful to have had some discussion before the course started on the pedagogy of the course…"* C2 - Lecturer C - 100604

Generally, there was a consensus that lecturing was being used for the communication of didactic information, and there was a feeling that this was not the most effective way to communicate knowledge. The popularity of Laurillard's Conversational Framework (Laurillard 1993; Laurillard 2002) is evident in the literature (Heinze and Procter 2004) and has therefore influenced the adoption of it for this research.

Additionally, it was observed that online facilitated teaching was not as effective in online discussions and therefore other means of online engagement should be explored. One option considered was to use commercial SkillSoft Learning objects, which would reduce the reliance on student-student interaction but would still give students the opportunity to engage in learning activities online. In order to facilitate the incorporation of SkillSoft on the Systems Analysis and Design module, which was to pilot it, this module was moved to the second semester. Thus the action plan for the fourth action research cycle would incorporate SkillSoft learning objects, since it was not possible to implement these in the third action research cycle. For the third action research cycle, pedagogy would be examined in more detail and would be used to structure the delivery of at least one module.

5.3.2.6 Utilisation of the face-to-face sessions

Closely related to pedagogy is the use of the face-to-face session times. The central decision at the programme design stage was to cut down face-to-face interaction from one day per

week to one four hour evening per week. Reducing the face-to-face session time necessitated finding its most appropriate use. In the first cycle of action research, the issues raised by the students were focused mainly on the fact that modules were delivered every other week, this was addressed by both modules being taught on one evening. This resulted in positive student feedback. In the second cycle new issues related to pedagogy were discussed:

> *"I think the students themselves said, ... they wanted to use the evening sessions more in that they get the notes beforehand, ... and then they come in and they are ready. But I mean, well that is a bit utopian, they are not going to do that."* C2 - FG Staff – 20704

The above quote refers to preparation by students at home and the observation that students don't actually prepare for the lecture. The belief of staff that the activity of *lecturing* is not an efficient use of face-to-face sessions is echoed in further comments:

> *"Yeah, I mean I wasn't very happy about doing lectures really. I didn't think, I mean I don't think that lectures are good anyway."* C2 - FG Staff – 20704

However, as can be seen from the above quote, despite the understanding that lectures were not the most effective ways to facilitate learning, lecturers still did lectures in practice. The students' point of view with respect to the use of face-to-face time in labs differed. Some felt that individual feedback was not useful:

> *"VB- spending face-to-face time in labs doing the exercise is a waste of time, I could be at home with a review in class"* C2 - FG Students - 100504

Other students felt that the face-to-face session was fine:

> *"Face-to-face was OK"* C2 - FG Students – 100504

From this we can conclude that there were different learners with their own preferred way of learning and use of the time in the face-to-face sessions. In addition to the range of learners' views, the staff views suggested that lecturing in a didactic manner is not seen as the most effective use of face-to-face time, but that there were reasons which led people to resort to lecturing. The compatibility of lecturing with teaching part-time students seemed to be a response to the fact that these students were not able or not willing to prepare for the face-to-

face sessions, thus inhibiting discussion. Drawing on the literature, it is suggested that how much people learn is based on their activity as follows:

> *"10% of what they read; 20% of what they hear; 30% of what they see; 50% of what they see and hear; 70% of what they talk over with others; 80% of what they use and do in real life; 95% of what they teach someone else"* (Biggs 1999:78)

Although these figures should not be taken literally (Biggs 1999), a trend can be seen from the above: the more interactive activities such as talking with others, performing activities and teaching someone else are of greater benefit to the student in terms of a learning experience. Therefore, it was concluded that there was a need for interaction and one of the theories that underpins interaction and the use of it in the face-to-face and online environment is Laurillard's Conversational Framework. It was decided to implement the Conversational Framework on one of the modules. This evaluation prompted two separate actions, one related to the issue of pedagogy and the other to the use of time in face-to-face sessions.

5.4 Summary

This Chapter has outlined the 12 themes that emerged from the first year of action research, containing two cycles, which focused on the pragmatic issues relating to the implementation of blended learning. A summary of these two cycles is depicted in Table 18: Summary of the first two action research cycles.

The first cycle highlighted the difficulties associated with staff training on the Blackboard Virtual Learning Environment, including issues with the training programme and the level of complexity within the Blackboard functionality. Further difficulties were related to the use of online discussion boards within the VLE and their moderation problems. Further themes emerging from the first cycle were related to the overall impact of the VLE, and problems with staff-student communication. Graduate teaching assistants' support and the session timings of the programme layout were two administrative issues that emerged as being problematic.

A number of actions were planned to address the practical issues of blended learning in operation. Some of the main changes were the introduction of a local staff guide to

Blackboard, the creation of discussion board guidelines and a change of the module delivery structure. Whilst a number of actions were implemented and subsequently contributed to the desired improvement, some were not effective and new issues have emerged, in particular the disparities of learners' knowledge and the pedagogy for the facilitation of blended learning.

Informed by the evaluation and planning based on the first two cycles of action research, the next Chapter will explore the third and fourth action research cycles. These will predominantly focus on the issues of pedagogy associated with blended learning.

Summary of the first two action research cycles		
	Cycle 1	***Cycle 2***
Academic year and semester	2003/04, Semester 1, cohort 1	2003/4, Semester 2, cohort 1
Observed module/s	- Systems Analysis and Design (C1)	- Management Business Operations (C1)
Simultaneous module/s	-Programming Business Information Systems (C1)	- Visual Programming (C1)
Emerging issues	Staff training on VLE Discussion board moderation Impact of VLE Staff – student communication GTA Support Session timings	Staff training on VLE Discussion board moderation Disparities of learners knowledge Pedagogy Face-to-face session usage Student induction

Table 18: Summary of the first two action research cycles

Chapter 6 Stage 1: action research cycles three and four

6.1 Introduction

The previous Chapter described the first two cycles of action research. These focused primarily on the pragmatic issues of implementing blended learning and the first stage of data analysis.

This Chapter will describe the last two action research cycles, which were conducted in the second year of this research. The main theme here is the pedagogic beliefs surrounding blended learning, as highlighted in the Figure 29: Conceptual framework: Chapter 6. This theme is influenced by the following research question: *a) How is pedagogy affected by using blended learning in programme delivery?*

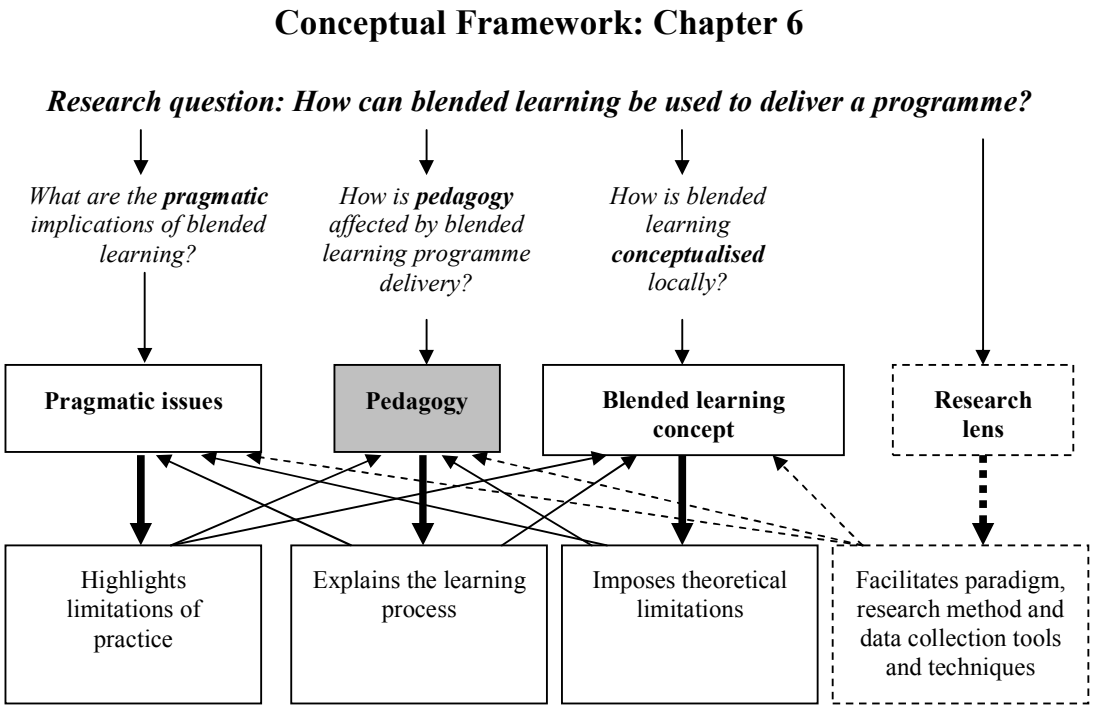

Figure 29: Conceptual framework: Chapter 6

Building on the previous Chapter, those actions that raised the issue of pedagogy will now be discussed. The structure of cycles 3 and 4 is similar to the first two action research cycles, using the stages of implementation and monitoring and evaluation and planning as the main sub-sections.

6.2 Third action research cycle

The table below is a reminder of activities that took place during the second cycle of action research and resulting issues identified for the third cycle (see Table 19: Cycle 2 action research summary). These issues are staff training on VLE, discussion board moderation, disparities of learners' knowledge, pedagogy and the use of the face-to-face sessions. One particular issue was prompted from the first action research cycle and that is student induction, improvements on this will also be implemented in the third cycle.

Summary of the second action research cycle	
Implementation & Monitoring	Train new staff Utilise discussion board guidelines Harmonise use of VLE Optimise staff – student communication Negotiate GTA support Implement two sessions per evening
Evaluation & Planning	Staff training on VLE Discussion board moderation Disparities of learners' knowledge Pedagogy Face-to-face session usage Student induction

Table 19: Cycle 2 action research summary

The description of this cycle, as with the first two action research cycles, is subdivided into two general sub-sections – implementation & monitoring and evaluation & planning. The implementation and monitoring section will outline the actions taken in the cycle and the effects observed. The second sub-section will draw on the themes of the third action research

cycles and evaluate these in relation to the literature and consider appropriate actions to be implemented in the fourth action research cycle.

6.2.1 Implementation and monitoring

In September 2004, two student cohorts were enrolled on the part-time programme being studied, the first cohort were the original students, who were going into their third semester and the second cohort who were beginning their first semester. As all staff involved on the programme, (first and second cohort), were expected to participate in the same meetings, the decision was made to monitor the two cohorts as a single action research cycle. Although the two cohorts are considered to be on the same cycle, where necessary the observations and comments will be differentiated.

The first cohort of students was taking the Project Management and the Databases modules. The second cohort was studying Management Business Operations (MBO) and Programming Business Information Systems. As discussed in the previous Chapter, in order to accommodate the incorporation of SkillSoft for the second cohort, the Systems Analysis and Design module, which was in the first semester the previous year, moved to the second semester.

The delivery of the Project Management module was designed around the idea of the Conversational Framework, since this appeared to be particularly useful for structuring blended learning. For the face-to-face part of the blend, students were issued with handouts, which were designed to be studied at home and reviewed the following week. There was no assessment associated with this exercise. It was assumed that students would be motivated to do the work based on their interest in learning. In addition to the self-study handouts, online multiple-choice questions were offered for each topic and released on a weekly basis. Every evening session for this module commenced with a recap of the previous week's homework. Regarding the online part of the blend, multiple choice questions (MCQ) and online discussion boards were designed to encourage learning interactions whilst students were off campus. The motivation for students to participate in the discussion board was the availability of questions taken from past exam papers. Attempting to answer these questions would have allowed students to continuously revise for their exam. The exam questions selected for online discussion were related to the homework and the multiple choice questions. In addition

to this, students were given an assignment that asked them to implement some of the theory they learned in practice. A further summative assessment took the form of a written exam at the end of the module. This module was supported by a GTA who had already experienced this course before, and a lecturer who was new to teaching on the course.

The Databases module was not really restructured according to the blended learning mode or any other pedagogical theory. There were two assignments that required students to complete practical implementation of databases and an exam. There were a number of online resources including references to a range of materials supplied by the publishers of the core reading. This website also provided a number of multiple choice questions for students to digest, designed to help with their revision. As with other modules, the module content was delivered in lectures and lab sessions. The online discussion board was utilised as a tool to support communication. This module was delivered by a lecturer who had already taught on the programme, and was supported by a new GTA.

For the second cohort of students, the Programming Business Information Systems (PBIS) module drew on experience from the first cycle and reduced the online discussion assignment to only one assessed discussion. The rest of this module remained mainly unchanged, both the GTA and the lecturer remained from the previous year (first cycle).

The second module for the second cohort was Management Business Operations (MBO). The content was similar to the previous year but both the lecturer and the GTA were new to the course. One major difference to the module layout was the introduction of interactive tutorial sessions where students had case studies and were able to work together and interact with the GTA. The assessment remained the same as the previous year.

We will now focus on the issues that were identified in the second action research cycle and discuss their implementation in more detail.

6.2.1.1 Staff training on the Virtual Learning Environment

A guide that highlighted the uses of Blackboard VLE and incorporated some of the lessons learned as a result of previous cycles was emailed to all staff on the programme. However, the

lessons learned were not taken on board by everyone. Some colleagues were unwilling to change their teaching style:

> *"…but I have always taught like that for the last 30, 40 years and that is the way that most people that started in my era actually teach."* C3 - Lecturer G – 80205

The above quote illustrates the view of one senior member of staff who was convinced of the value of the teaching method he used.

6.2.1.2 Addressing disparities of learners' knowledge

This was addressed in particular in the PBIS module. In the first cycle, PBIS incorporated two assessed discussions, whilst in this cycle this was reduced to only one discussion and students were reminded that the emphasis was on getting them to use discussion boards. Students who were struggling with their work were encouraged to make appointments with the GTAs and ask for one to one help, so that they didn't feel frustrated and where possible were not worried about asking questions.

6.2.1.3 Integration of pedagogy

One of the underlying pedagogic theories given particular attention on the programme was constructivism and the special interpretation of it in the Conversational Framework (Heinze and Procter 2004). One module was chosen to trial the Conversational Framework. Below are some of the observations of the lecturer who led the module:

> *"I think that this has to be linked to assessment in order to work, because I think that is what motivates the students more than anything else. In other words you could set possibly at the early stage some formative assessment, which we did do, i.e. exercises. … Now some students they … are really only focused on what have they got to do to pass this. … 'I don't understand how to do this can you tell me how to do this'. Which isn't really, I mean the Conversational Framework is not really just about that. It is not meant to be just a conversation as to can you tell me what I have to do in order to pass this assignment."* C3 - Lecturer C – 150205

The students were particularly vocal about the practical elements of software taught on the programme. Their view was that they had to be shown how it is used and that better instruction would help them to learn more:

> *"You can do whatever you want in the class we just agree with it, but once we log on we just sit there and wonder what are we doing now? Theory and application should happen in exposition of application if that doesn't happen then there is something amiss."* C3 - FG Students – 100106

The practical element of learning and teaching was also highlighted by some staff who criticised the emphasis on too much theoretical work. They felt that practical work was an important part of student learning and should be referred to in a simple manner - learning by doing:

> *"…That's how it works: learning by doing…. Not one of these long sounding words that normal people don't understand. People understand learning by doing. That's basically what it is, that is what all learning is actually. …Learning by doing is what students understand because it is simple words. Problem Based Learning they don't understand it. It is learning by doing, which allows the student to reflect on what they have done and they can apply it to where they are working,… That is not the way they do it now it is mainly theory isn't it? The point is that IT is engineering in my opinion, it is not science, it is engineering, if you think about it."* C3 - Lecturer G – 80205

Whilst the above lecturer advocates activities in order to promote learning, the interpretation of activity seems to imply that only practical computer related activities allow students to learn. Other activities such as discussion and the students teaching each other are not acknowledged as effective learning opportunities. When it comes to the pedagogy of structuring a lecture or online material, the following interviewee highlighted the need for breaking down major topics into components and allowing for pauses for reflection:

> *"I am approaching it from the point of view of breaking points down so that I can draw a line under it and I could say so that is that. I like small self-contained chunks. It sounds really simple, and for you and me it probably is, because we have done this for 4, 3, 5 years and you as a researcher are used to it because you will be reading text books, papers, and there comes a point where you would think I can't read any more of this. Then you need to go away, make a cup of tea or coffee, and have a chat with your wife…"* C3 - Support F – 30305

Breaking up a lecture into manageable chunks is supported in the literature with respect to concentration spans. The work of Biggs (1999:100) suggests that a student's concentration span in a lecture is only approximately 10-15 minutes and that a short rest or a change in activity will restore the concentration span back to the original level. Biggs also notes that a summary at the end of the lecture helps students to memorise and understand the learning content.

6.2.1.4 Optimisation of the use of face-to-face session

There was a general consensus that the programme was not designed to be delivered in the associationist way where students are told the 'truth' and are asked to recite it in the exam. However, a major factor prohibiting interaction in the face-to-face sessions was the students' lack of preparation. Lecturers present at the focus group were asked to reflect on their individual practice and those who were new to teaching on the part-time programme were interviewed and made aware of the experiences of others. Even so, a dialogue in the lecture was not something that was implemented on all modules. Some staff who, even though they were present at the focus group, still read out their lecture notes in the lecture. The following is an observation from students on that module:

> *"It is like the programming lecturer she is reading the slides. But we can read the slides, it is after the lecture where you do the actual learning."* C3 - FG Students - 71204

Some students observed that although some of the face-to-face time would have been better spent in programming labs, for the more theoretical subjects it could have been the other way round:

> *"On the programming side of things yes, but on the MBO I think it should be the other way round."* C3 - FG Students – 71204

These views might suggest that the module content influences the usage of face-to-face time. In any case, there was general agreement for the need for variety in the face-to-face time:

> *"…You just have to be aware that in your face-to-face time you have to establish some dialogue. So you have to break up your topic with some kind of short exercises and some other topics."* C3 - Lecturer C – 150205

6.2.1.5 Moderation of discussion boards

The discussion board guidelines were integrated into the overall 'good teaching principles' of the Information Systems Institute, and published on the intranet for all staff to use. There was commitment from a number of staff to get the discussion boards to work and there is also some evidence that discussion boards within Blackboard have to be maintained:

> *"…I am trying to use it on the part-time course [programme], because I think that is where it is most useful (on a part-time course) …. And also if we are going to offer e-learning, we have to offer it otherwise the students are just going to turn off in droves as far as I can see. So I think discussion boards are quite critical …"* C3 - Lecturer G – 80205

For students, the guidelines formed part of their induction to Blackboard VLE. They were integrated into the induction guide outlining all tools and the way that these are supposed to be used and in which situation. For example, if someone wanted to get speedy advice they were asked to phone, but if they wanted to get a broad view of a solution, they should post their question on the discussion board for everyone to see and comment on.

6.2.1.6 Student induction

The student induction was implemented as a three stage process; during registration, then in the actual induction session and on an ongoing basis during the first semester modules. At registration all new students were asked to log onto a computer to validate their account. This allowed the pre-empting of any problems with the induction session where students were asked to post short messages on discussion boards to introduce themselves. The PBIS module introduced the assessed discussion board collaboration activity, which was again designed to encourage participation.

6.2.2 Evaluation and planning

The previous sub-section outlined the implementation & monitoring of the third action research cycle. The main themes are related to staff training on the VLE, disparities of learner's knowledge, pedagogy, face-to-face session usage, discussion board moderation and student induction.

As can be seen from the figure below, the third cycle generated a number of issues that were raised by students and staff on the programme (see Figure 30: Cycle 3 Intersections). The increase in the number of nodes is considered to be related to the larger group of individuals concerned with this course, which included two cohorts of students and two new lecturers. The data was generated by two student focus groups (one for each cohort), two support staff and two lecturers.

Cycle 3 Intersections

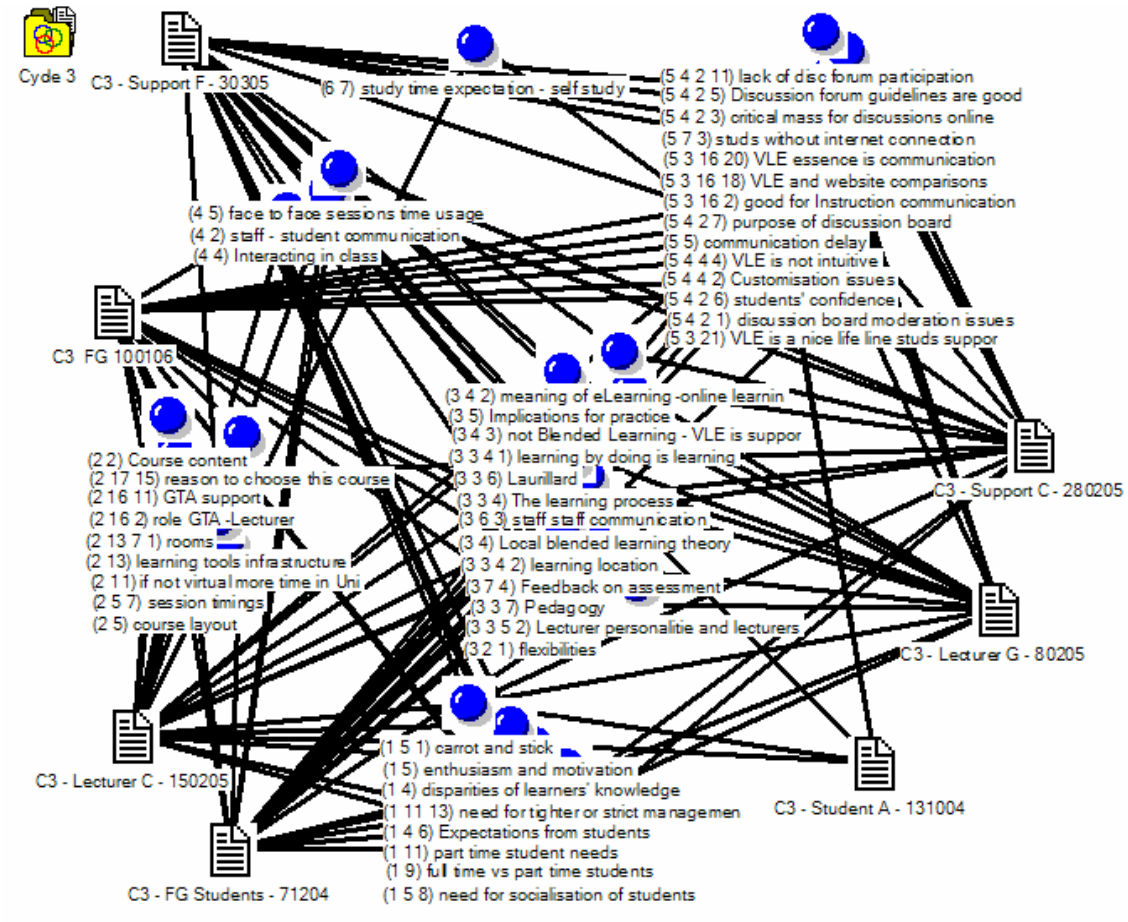

Figure 30: Cycle 3 Intersections

The following six themes were perceived to be more significant than others and will be explored in more detail. Where possible comparisons with the literature will be made and actions for the final action research cycle identified.

6.2.2.1 Assessment

One central observation arising from the implementation of the Conversational Framework was the importance of a sense of motivation for students to carry out their work. One of the main reasons why the in-class dialogue was thought to have failed was that the majority of students did not see the value of revising for the sake of acquiring knowledge. A number of students approached their study from a pragmatic point of view weighing up the return on investment in the time and marks relationship. From a student's perspective, assessment is a carrot and a stick at the same time – the instrument that rewards positive behaviour (carrot) and punishes negative (stick). Assessment was perceived as one of the crucial elements for the operation of the Conversational Framework:

> *"I think that this has to be linked to assessment in order to work, because I think that is what motivates the students more than anything else…"* C3 - Lecturer C – 150205

This view of assessment as motivator was also echoed by some of the students' comments which indicated that they needed assessment to get them to work:

> *"I only work under pressure"* C3 - Student A – 131004

Another member of staff observed that as a result of removing the assessment element from an online discussion the participation level decreased:

> *"…I said that only those people who want to contribute can do so and as a result only a few people contributed something. Very few of them were interested."* C4 - Lecturer A – 160505

The Conversational Framework, which was adopted for one of the modules, has proven that it can be useful to structure learning activities. However, the main problem in this research was that only one or two students made full use of the dialogue opportunities. The overwhelming

majority of students only focused on activities that contributed to the summative assessment – i.e. marks which would influence their progression. This highlights a major weakness of the Conversational Framework in that it relies on the students to be motivated to learn based on their desire to develop, and this was not evident in the majority of our part-time students.

In the second action research cycle, it was established that the face-to-face sessions should employ teaching methods that were inter-active, such as discussions or practical tasks. However, this did not happen in practice due to the misalignment with assessment. The participants' observations and John Biggs's theory of Constructive Alignment helps us to see why (emphasis added):

> *"When there is alignment between what **we want**, how **we teach** and how we **assess teaching** it is likely to be much more effective than when there is not. (Cohen 1987) calls alignment between objectives and assessment (criterion referenced assessment) 'the magic bullet', so effective is it in improving learning. I am going further and suggesting that the teaching methods should be included in the alignment."* (Biggs 1999:26)

It can therefore be inferred that learning which is aligned with the teaching methods as well as learning objectives and assessment is more effective and must be incorporated into the design of modules delivered by blended learning. Assessment provides structure for learning and has a motivational role for the students. The 'carrot and stick issue' highlighted by assessment prompted planning in the subsequent action research cycle that addressed this.

6.2.2.2 Learning tools infrastructure

The programme focuses on teaching students some aspects of information technology, which are then applied in practice. A number of modules on this programme required the students to produce an artefact using a software application, which was only available for use on-campus. For example, modules such as databases and networking required students to be logged in on a local network in order to be able to access their learning account. There were also other modules where students were able to download trial or limited versions of software for their learning time so that they could complete their coursework. For example, in the programming and project management modules both Visual Basic and MS Project were available for download. The third category of technical infrastructure required is an Internet enabled

computer, able to access the Virtual Learning Environment and any other learning objects facilitated by the University.

From a staff point of view the equipment that was available in the labs and lecture rooms was not always the most useful. Also, it was suggested by students that it would have been more useful to have a projector in the lab so that each step could be shown to them on a screen and they would be able to see for themselves at least what one of the solutions could be.

For some modules the software required to complete a student's work was handed out on CDs, which students had to share amongst themselves. This did not really work since students are only on campus once a week; in one case by the time one of the students got hold of the software it was too late to start the assignment:

> *"I think it would have been useful, when we started doing project management if we also started doing SQL and stuff and needing Oracle and stuff. But I am not going to go out and buy this software and the rest of it. So it would have been helpful at the start saying if you haven't got it here is a disk with it on it. It took a long time until the disk got to me and it was just before Christmas so of course it didn't work and I had nowhere to go with it. It was quite annoying."* C3 - FG Students – 100106

Overall, it seems that if students are going to be required to use some software, it would be useful to hand out CDs with it on during the first week of the module or to allow for off campus access to it. It has already been acknowledged that engaging students in activities is an efficient way of learning. However, on a practical level a lack of planning reduced the students' chances of engaging meaningfully in the activities. Consequently, the subsequent action research cycle will include actions to address this issue.

6.2.2.3 Virtual Learning Environment

The first cohort of students did not have to use the discussion board for assessment in this cycle. However, several students found online support via discussion boards to be of great benefit. In particular in the first cohort there were a number of active participants who frequently visited the online discussion board and posted questions and answers to each other, creating the 'critical mass' necessary for sustaining the online interaction. Because they were going through a similar process and there was a feeling of tackling a common problem, the students were able to share experiences and benefit each other. Those who provided the

answers were engaged to some extent in 'teaching activity', which is the most effective form of learning (Biggs 1999). Those students who were on the 'receiving end' of the contributions benefited because their questions were replied to quickly and they did not have to wait until the face-to-face session. One student was particularly complementary about the 'comforting' support mechanism facilitated via discussion boards, which allowed communication exchange right up until the last minutes before assignment submission:

> *"It is nice, I don't know about everyone, but I know that I am new to this course and so it is all a bit scary, but I feel that it is a nice little life line. I feel a bit panicked out I know although it might be 10'oclock but you know that you can go, and you know that you have nearly finished it, and it is nice to know that somebody will explain it to me. You always get something. Probably it will confuse you a little bit further but it is nice to know."* C3 - FG Students – 100106

In particular the multiple replies and perspectives proved to be useful, addressing the question from many standpoints:

> *"… if three people have said the same thing, I would understand what one person said but the other two would just go over my head. And it is how everybody says it for me. Do you see what I mean? It is quite nice to see what different people say because I understand bits of the bits, so it is good."* C3 - FG Students – 100106

Other benefits perceived by students were archiving and being able to re-read the same post several times, which would not be possible if it were a lecture or a telephone conversation:

> *"…when I was having trouble to work out the start and finish date, [Name] has worked it out and put it on the Blackboard and it was nice to be able to go back to it several weeks afterwards, because I had lost my copy. That is another thing I like about it, weeks later on you can still get hold of it."* C3 - FG Students – 100106

Overall, the impression gained from the observations of the majority of students' was that the Blackboard facilitated discussion boards were useful in providing a support mechanism. These benefits of online discussion boards support the social constructivist beliefs such as the Zone of Proximal Development (ZPD) (Vygotsky 1962). The dialogue or communication between the students is an important factor when it comes to facilitating student learning (Heinze and Procter 2005). It is acknowledged that the face-to-face sessions can create a barrier to some students' participation due to their gender, race, ethnicity and linguistic differences (Yanes, Pena et al. 2005). These issues are removed to some extent in the online

environment, where the individuals' attributes are not present and only their message content is focused on. There are a number of benefits generally acknowledged regarding students' interaction, these include the following (emphasis added):

> *"1) Online discussion fosters **student interaction**. ... One consequence of the increased student interaction is a greater sense of teamwork and collaboration. 2) Online discussion **places learners in an active role**. All students assume the active role not just those who are extroverted. ... 3) Online discussion forum can enhance the **teacher-student relationships**... 4) Online discussions encourage the use of higher **thinking skills**. ... 5) The final benefit of online discussion is the **flexibility**. ..."* (Yanes, Pena et al. 2005:29-30)

The data collected as part of this research suggests to some extent that the above five benefits have been realised, in particular the fifth element of flexibility has been highlighted by some students, and is the focus of this section. A more detailed discussion of these five issues will be provided in the Discussion Chapter.

The action plan for the fourth action research cycle will also include the VLE as a 'nice lifeline'.

6.2.2.4 Students' confidence

Despite the positive views of some students who saw discussion boards as a nice lifeline, as discussed in the previous section, there were some who did not have the confidence to post their questions online. One example shows that a student in the second cohort felt that the question they had was too simple and they did not want to be embarrassed in front of the whole class:

> *"... I had a question and I thought it was a bit of a thick question and didn't really want everybody reading it ... initially that kind of thing was quite scary. But that is the only intimidating thing."* C3 - FG Students – 100106

Similar views were expressed by those in both cohorts, emphasising that it takes time to get used to this kind of interaction, and that the fear would eventually go:

> *"That is how it was last year, when we started a lot of people were actually not using it because of this [fear]. But it was just us not coming from the IT background it was a*

bit complicated, but then there was a time where you say bugger this and lets get on with it…" C3 - FG Students – 100106

The issue of students' confidence was picked up by a number of staff who felt that when comparing the two cohorts, the first cohort were more confident than the second in their online communications on discussion boards:

"There's a different group dynamic, but also they're a bit more confident, the second years aren't they? - they've been going a bit longer and they know what to expect." C4 - FG Staff – 90606

The inhibiting factor of fear brings us back to the learning culture which is fostered in the classroom. Despite the argument that online discussion boards remove individual attributes (gender, race, age etc.) which would be visible in the face-to-face session, the online discussion is still problematic if people concentrate on the message alone. Whilst 'simple' questions can be asked in the face-to-face session and accompanied by a smile, in an online discussion every question can be seen by everyone and students can be 'judged' on their contribution.

The e-Moderating model (Salmon 2004) highlights the need for online socialisation before information exchange and knowledge construction can be facilitated. To achieve both of these it is necessary to spend time and as can be seen from the data, students felt more comfortable sharing their 'simple' questions or problems with others once they got to know each other better. This suggests that the five benefits of online discussion (Yanes, Pena et al. 2005:29-30) require planning and do not always materialise naturally. This resulted in this issue being included in the fourth action research cycle.

6.2.2.5 Learning location

The aspect of pedagogy brought to our attention the importance of the learning location and the students' views about where they felt they were learning. 'Learning by doing' or Kolb's experiential learning theory (Kolb 1984) emphasises the experiential element of activities and is the second most effective learning activity after teaching others (Biggs 1999). The emphasis on experience is different from the conversational dialogue, which emphasises the discussion between the learner and teacher. The experiential learning theory was supported by data from students who felt that they had learned most in the practical activities:

*"In the tutorial sessions, I think that I learned most stuff in the lab session after the lecture."*C3 - FG Students – 71204

The question to one of the support staff on whether the assessed online discussion was facilitating learning attracted a positive response:

"Yeah, I will give you that. I think some of them will have learned from that, that's true. But you know considering that the discussion forums and the online assessment is what they can actually learn online, the rest is communication and support really." C3 - Support C – 280205

Generally, the findings suggest that learning was facilitated by activities that could have been discussions or practical work. Not many students believed that they learned by simply attending a lecture if they did not engage with the material. The opportunity to engage in teaching other students was not facilitated on this programme and therefore no evaluation of that can be made. The action plan in the fourth and final action research cycle will further examine the issue and relevance of the learning location.

6.2.2.6 The utilisation of the face-to-face sessions

The learning location also puts the emphasis on the face-to-face session time, which remained a contentious issue. Most points have already been discussed above, for example that some subjects are better delivered in practical sessions and other subjects are better suited to lecture interaction. One issue that is more generic, but has a major influence is the actual personality of the lecturer involved in the delivery of the module. The question that emerges here is whether some staff are better at lecturing and others are better at practical modules. The quote below is an extract from an interview with a member of support staff, which highlights the importance of a lecturer's personality and relates it to how the content is presented:

"From the delivery point of view I don't think that you can separate the person's personality from the delivery - not face-to-face anyway. You and I can produce a manual for the delivery, which shows how a particular lecture should be delivered, unfortunately if I was to give it to Sir David Frost, he would deliver it in his usual style. Give it to Timmy Mallet, and he would deliver it in a completely different way. It is still the same, but face-to-face is purely down to the person. The material could be whatever, but how the students react is down to the individual. It could be a very interesting area, but if you are dull as ditch water, people are going to switch off." C3 - Support F – 30305

The above quote highlights the impact of personality on face-to-face delivery, so lecturing staff are perhaps best placed to decide how they prefer to use their allocated time and which activities they feel most comfortable with and best fit their personality. Research evidence supports the need for a lecturer with a positive approach and that charisma is an important factor in motivating student learning [see for example: (Alauddin and Butler 2004; Caltabiano and Caltabiano 2004; Shevlin, Banyard et al. 2000)]. This aspect highlights that a lecturer's warmth, attitude and approachability have an impact on the students' perception of learning (Caltabiano and Caltabiano 2004). Moreover, it is suggested that the student evaluation of teaching does not always reflect its effectiveness, since the evaluations are influenced by the charisma of the individual lecturer (Shevlin, Banyard et al. 2000). Consequently, the fourth action research cycle will include actions in relation to the usage of the face-to-face sessions.

6.3 Fourth action research cycle

This Chapter has so far concentrated on the third action research cycle (see Table 20: Cycle 3 action research summary). Six new themes were identified which required attention in the final action research cycle. The themes discussed in the third cycle are summarised in the table below and include the role of assessment, learning tools infrastructure, VLE as a lifeline, students' confidence, learning location and finally the use of face-to-face sessions.

Summary of the third action research cycle	
Implementation & Monitoring	Staff training on VLE Discussion board moderation Disparities of learners knowledge Pedagogy Face-to-face session usage Student induction
Evaluation & Planning	Carrot and stick Learning tools infrastructure VLE nice lifeline Students' confidence Learning location Face-to-face session usage

Table 20: Cycle 3 action research summary

The fourth and the final cycle of action research incorporated action plans from previous cycles, one of which was related to the second cycle –the use of the SkillSoft learning objects. The work in this final cycle continues to examine pedagogy related themes as set out at the beginning of this Chapter. This cycle commenced with the second semester in February 2005. Table 20: Cycle 3 action research summary also represents the summary of activities that were planned to take place during the fourth cycle of action research. As with previous cycles, the description is subdivided into two general sections – implementation & monitoring and evaluation & planning.

6.3.1 Implementation and monitoring

Out of the four modules, the Systems Analysis and Design (SAD) and Visual Programming 1 (VP1) modules had already been experienced on this programme. There were no major changes on the VP1 module as described in the second cycle. However, the SAD module tried to implement the Conversational Framework theory and build on the experience from cycle three and integrate assessment to encourage dialogue between the students themselves and between the staff and students. In addition to the influence of Conversation Theory, SkillSoft learning objects was also integrated into the overall assessment. The plan was to introduce a motivator for students to undertake computer based training and subsequently allow them to go through a multiple choice questions assignment to assess their knowledge. There were no online discussion assessments and no group work, since it was thought that these had already created too many difficulties because of the disparities of knowledge between learners.

The Networking module used several assignments for which students had to attend practical sessions working with Novell client software. In addition to this, two assignments were set for students to work on in groups and research on certain networking related topics. The assessment was concluded with an end of semester exam.

For the Systems Production module students worked in pairs and simulated a client – customer relationship on a system production process. The module was based on continuous assessment with one final hand in opportunity where students had to submit a report and where appropriate, the software artefacts produced.

6.3.1.1 Assessment

It was noted in earlier cycles that the students were predominantly motivated by assessment. Assessment was therefore perceived as a 'carrot' and a 'stick' in the sense of rewarding good work and discouraging unsatisfactory work. Having observed the online discussion, one of the lecturers confirmed the belief that there is a need to motivate students with assessment in order to start their use of discussion boards:

> *"So it was the principle of getting them there, and even some of the very shy ones have put something up there. I mean you need to get a stick together to get them using the environment generally."* C4 - Lecturer B – 200505

An observation from a student who was in the first cohort also supported the view that assessed discussion boards have the motivation factor which can start students using them:

> *"Again, thinking of what [Name] was doing in the first year, firstly she got a couple of assignments on [discussion] boards you got marked. You're supposed to have a marked board that piled them [students] in."* C4 - Student C- 170505

One module built on this by integrating assessment into all activities which were perceived as important, to structure the students' commitment. The observations confirmed that students were more committed to activities when they were assessed.

6.3.1.2 Improvement of learning tools infrastructure

Whilst with some software tools off site access issues were resolved, software for the networking module and also for the databases module required the student to be on campus. For example, the CD that was offered to students for home installation of the Oracle software was unfortunately perceived as being too complicated to install. The problem of different computers and software incompatibility highlighted another potentially critical issue for a programme that offers a Bachelor of Science in Information Technology. Some students believed that their class mates were using 'inadequate learning tools infrastructure' as a reason for leaving the programme, just because they were unable to do their work due to installation difficulties:

"…Now the software that you ask them to install works with one thing it doesn't work with another thing and it completely messes up a couple of computers and they said they want to give up." C4 - FG Staff – 090606

Further infrastructure related issues included access to the library and the observation that it is expensive for students simply to visit the library. Issues of classroom infrastructure such as interactive whiteboards, data projectors in the labs and computer terminals that were not working were also highlighted by the students. Some of these views were also echoed by staff participants:

"…I really think that there should be data projectors in the labs. For example you show them how to do it, let them do it and in another five minutes you show them how to do the next step. Yes, I really think that there should be these data projections." C4 - FG Staff – 90606

There were also students who had difficulties getting access to SkillSoft from home and even on campus:

"I mean the only criticism for me, not so much a criticism but it was getting SkillSoft to work. Not just at home but even in the labs." C4 - FG students – 100505

Generally, it was emerging that the technological infrastructure was posing a number of additional challenges for staff and students. However, there were some noticeable improvements to this, resulting from the move to a building that belonged to and was purpose built for the Information Systems Institute and a better knowledge by both staff and students of the Blackboard Virtual Learning Environment.

6.3.1.3 Set up of the Virtual Learning Environment

The Virtual Learning Environment was set up so that each module had a discussion board enabled. Several students used this tool to get help and help each other with programme related issues. In particular, there seems to have been an active critical mass of students who were communicating with each other:

*"[Name]'s comments posted on the BB [Blackboard] have been useful with regards to certain queries …. I have even posted some myself and had useful replies."*C4 - Student H – 50806

A similar observation was made by a member of support staff:

> *"The fact that we have the Blackboard is helpful because many of them have been using the Blackboard for submitting their assignments, although we do manual marking it is a different thing you know at least they are making full use of the electronic media as such."* C4 - Support D – 310505

Overall, Blackboard was predominantly used for information exchange in the form of uploading lecture notes and slides. The discussion board functionality provided the interaction and support mechanism on the programme.

6.3.1.4 Students' confidence

The issue of student confidence was evident again in the fourth cycle. It is multifaceted and affected a number of areas where students should have been able to interact but were not doing so because they lacked confidence. In their discussion on reasons for not participating in online discussions, a number of them did not feel confident in asking questions:

> *"Yes, you have to be brave to be able to say I am the first one and I didn't understand that."* C4 - FG students – 100505

It was broadly concluded that the first cohort of students were much more confident in approaching staff and GTAs and in collaborating with each other on discussion boards.

6.3.1.5 Learning location

The places where students thought they learned the most varied, the three locations generally referred to were in the face-to-face sessions, online facilitation and self-study based on research or reading books:

> *"I think that I have taken away stuff in the lectures, pointing me in the right direction and where I have to research."* C4 - Student B - 230505

Yet others were saying that they learned at home working on assignments and that they were confused by the lecturers:

> *"The truth is that I am learning from the assignment a lot. But my point is that I didn't need to be in the class at all. I can do it on my own but I didn't need to come basically. I get confused sometimes when I hear him talking about something."* C4 - Student A – 170505

However, the social interaction between students and the subsequent associated learning was observed by many to have made a difference. This social need is made very explicit by a student who chose this programme over an Open University alternative because of the face-to-face sessions:

> *"Actually coming in to the Uni and mixing with people, this is where I learn better. That is actually the main reason I came on this course. I was considering an Open University kind of thing from the flexibility part-time angle, but I know what I am like, if I have to go somewhere to a lecture, or to a class somewhere, I know that I will definitely learn, because I have to go there and I will take it in. Whereas if it is all virtual, I would struggle to do it, because of the very nature of my work, family commitments and my part-time job I would not be able to do it. But if I am not able to say this time I have to go somewhere and I have to do this, my time will be taken up with doing something else."* C4 - Student F - 230505

The location and its perceived influence upon learning varied amongst students. The benefit of face-to-face sessions provided opportunities for social interaction that were felt to facilitate learning. Working on assessments off campus individually made other students think that they learned there more. These observations support the need for a variety of activities in order to cater for different learning styles.

6.3.1.6 Utilisation of face-to-face sessions

How the face-to-face sessions were used was down to individual tutors within modules. In the SAD module the sessions were used for a number of different activities. In some cases there were lectures, practical sessions involving use of the modelling tool, tutorials, in-class group assignments and computer based training. However, there was one module where the lecturer was lecturing for three hours and offered questions at the end of the session. This type of time usage in a face-to-face session was not popular with students. The individual concerned thought that he had to talk about all the issues in order to cover the syllabus fully.

6.3.2 Evaluation and planning

The previous sub-section outlined the monitoring & observations of the final action research cycle in this study. The issues examined were related to the use of assessment which was perceived as both a carrot and stick, learning tools infrastructure, VLE being a nice lifeline, student's confidence, the learning location and the use of the face-to-face sessions.

As can be seen from the nodes presentation (see Figure 31: Cycle 4 Intersections), cycle 4 had the largest number of sources that were used to inform observation and evaluation in this research. Due to the increased number of data sources the number of nodes also increased. Overall this cycle included seven lecturer interviews, three support staff, nine individual student interviews, two student focus groups and one staff focus group.

Cycle 4 Intersections

Figure 31: Cycle 4 Intersections

As with evaluation and planning in the previous action research cycles,, the following themes represent the most pertinent issues as perceived by the author. The discussion of these themes is related to relevant literature where possible to inform future practice. Unlike in the previous cycles the actions of these themes will not be implemented as part of this research.

6.3.2.1 Learning objects – SkillSoft

The SkillSoft learning objects were incorporated into the SAD module. Students had to work through computer based training sessions and complete a test at the end. The assessment contributed to the overall module mark, thus providing the motivator for students to engage with the learning objects and test their knowledge firstly formatively, where multiple choice questions (MCQs) were asked at the end of each topic and then the students were able to take a MCQ based test which was integrated into Blackboard and fed to the students' summative assessments. The questions were manually transferred from SkillSoft to the Blackboard VLE to facilitate the tracking of the students' results. This was necessary since the two systems were not integrated.

Students' opinions on SkillSoft varied; mainly they were not satisfied with the technical set-up and the difficulties of accessing these learning objects online. Also, the impressions of the lecturer in charge of the module were negative. The lecturer also used some SkillSoft elements on a Masters level module:

> *"I have a very vocal discussion forum that I'm not quite sure what to do with, from the MScs I asked them to give me feedback on a discussion forum that was incredibly active and very negative."* C4 - FG Staff – 90606

On the technical side, students experienced some major difficulties and again the view of content level and its applicability were questioned. There were also others who recognised the limitations of SkillSoft but considered it a good alternative to some books. There were suggestions that certain SkillSoft modules might be more useful for some subjects than others:

> *"To be perfectly honest my experience of this has been more sort of theoretical stuff where you were sort of meant to think about it and sort of gather your own thoughts around this stuff where you had to bring these up in the lecture. Yep, maybe it is more for this soft of kind of practical stuff, where there might be a right answer."* C4 - FG Staff - 90606

The evaluation of the staff leaned towards the conclusion that SkillSoft was more an additional resource than a major impact on the way the programme is structured. Three reasons led to the rejection of future use of SkillSoft learning objects: Firstly there were a number of technical access issues where SkillSoft required the latest client side Java Run Time environment (software on the student's computer) and some students were not able to access this because they were behind firewalls which did not allow access to this. Secondly, because Blackboard and SkillSoft were not integrated, all assessment that was done by students in SkillSoft was not recorded in Blackboard. Each question had to be manually transferred from the SkillSoft to the Blackboard environment, creating an unnecessary administrative overhead. Finally, the third problem was the issue of content relevance. The material covered by the SkillSoft learning objects was not necessarily aimed at the Higher Education audience being more appropriate for managerial training sessions. This resulted in some sections which were not relevant to the module topics taught. It was not possible to dissect and remove some sections of the learning object. If there was an opportunity to integrate SkillSoft with the Blackboard environment and some flexibility was offered to 'pick and mix' sections of the content, then it might prove a viable option (Heinze and Ferneley 2006). This pilot highlights a number of technology related issues, which are very context specific. However, when considering similar evaluations of SkillSoft in other settings it can be seen that off the shelf training is not generally well respected. The example of failure in the adoption of SkillSoft in the United States Department of Defence provides a similar conclusion that the generic products fail to address the specific needs of individual learners (Snyder 2003). Our findings also support other studies that note the lack of learning objects adaptability (Parrish 2006).

6.3.2.2 Learning tool infrastructure - car parking

One of the main complaints received from both student focus groups in the fourth cycle was the issue of car parking. The car park on - campus security had been increased and this had resulted in students not being able to park near the building where they had the face-to-face sessions. One of the main arguments about having car parking near the buildings where classes take place is that these are evening classes and in some cases students leave when it is dark. Salford University Peel campus is known for its security issues and the closure of a police building nearby raised personal security concerns for both staff and students. One member of staff experienced the inconvenience of not being able to park in the vicinity of the evening class building:

> *"Towards the end of semester two I ended up having a blazing row with the man at the gate. I was going in usually every week and he was fine about it, and in the last few weeks he said that he was explicitly told that he was not allowed to let anybody in anymore. I was like well I am driving off right now and you are going to teach…"* C4 - FG Staff 090605

As a result of this common concern of personal security for evening students, this issue was taken to the relevant individuals in the car parking security unit. This issue highlights how aspects which are beyond the control of the programme team can affect the learning situation of individual students. In this case the "main business" of the University, which is aimed at full time students, ignores the needs and special requirements of part-time evening class attendees. This raises the issue of adjustments of overall infrastructure to accommodate students who attended just one evening per week. For example, it was possible to purchase a car parking permit for either a whole year or just a semester. For those attending one evening per week this does not make financial sense – paying for five days and only using the car park one day per week. Similar issues of the institution's provision of infrastructure are also identified in other studies. For example, the use of library resources is a frequently acknowledged issue, with opening times that are of no benefit to part-time evening students (Alauddin and Butler 2004).

When safety becomes a concern for those attending an evening class, this can reduce student numbers, and make staff less enthusiastic about teaching in the evening. Action was taken to negotiate a special car parking deal for part-time students who would be able to park on the inner campus car park. Further, the flexibility of choosing to purchase a yearly permit for a designated day a week was also negotiated. This solution benefits not only students on this programme but on any other programme within the University of Salford and was felt to be a positive step forward.

6.3.2.3 Student Community

Compared to the second cohort, the students in the first cohort were much more engaged with each other in their informal conversations and were helping each other on discussion boards. One of the first things that students on the first cohort wanted to get implemented was a list of all their names and photographs so that they were able to identify who was who in the class. This was done by scanning one of the class lists and posting it onto the Virtual Café discussion board. This was frequently used and students were satisfied with it, which allowed

them to learn each others' names and relate names to faces in the face-to-face sessions. As the programme progressed and other students joined the first cohort, it was observed that these new entrants felt welcome and integrated well.

There were some students who were direct entry on the first cohort who joined in the fourth cycle. The majority of these students integrated without any difficulties; however, there was one case where a student felt uncomfortable when others were trying to get his picture published on the programme's internal virtual café:

> *"I joined the course half way through the second year. I found one of the students to be overbearing and a destructive influence on all lectures. He continually pointed cameras at the new students and I found this to be most offensive. I think he had a negative impact from the start although he thought he was fun and crazy."* C4 - Student G - 160505

A community feeling amongst the second cohort was not obvious. The lack of intra student communication was observed by a number of staff. The lack of engagement and support was also observed in the online discussion board interaction:

> *"I think that discussion boards were only used for getting help when somebody had a problem. I think that community thing that makes you belong to a group, that makes a difference to the way you learn you know."* C4 - FG students 100505

It can be said that the removal of group assignments from the modules on the second cohort could have also removed some of the elements of engagement amongst students. The loss of community spirit was perceived as being a reason for the lack of interaction within the group:

> *"What we are saying is that this year it didn't work very well, that they didn't come very much together as a group we do need to help them to do that, this kind of learning community stuff."* C4 - FG Staff 090605

Overall there was a feeling that removing the assessed online discussion for the first module and assessed group work also removed the element of general student interaction. Generally, it was felt that student-student interaction was important to keep up the community spirit and encourage peer learning. However, some of the students even on the first cohort felt that there was almost a competition for marks:

"I haven't particularly learnt anything from any of the students as a lot of students seem to be in competition for the top marks." C4 - Student G – 160505

Referring back to the effectiveness of the learning activities, as discussed earlier, it is suggested that the opportunity to discuss with others was a great help in increasing learning potential. In the type of assignments that were either group or individual there was a notable contribution to this social interaction. For example, if the students were individually assessed there appeared to be a "competition culture" for the top marks – as stated in the above quote, reducing the willingness to collaborate. Competition can be also viewed as a positive motivator for learning. The so called "achievement motivation" (Biggs 1999:59) explains the reasons for learning as a desire to enhance learners' egos by working against the other students and being better than them. This motivation is not the most effective way to learn, since the winning is more important than the learning. This implies that a strategy that allows students to collaborate with each other is a better option. However, we also noticed that there were a number of problems with group assessment where some students were not able to organise suitable meeting times etc. The solution here would lie in the option to have individual assessment which has a non-obligatory peer element. For example, students could be asked to review each others' drafts but only in pairs so that if there were some similarities in their work this would be acceptable and not considered to be plagiarism.

6.3.2.4 Staff autonomy

One of the underlying causes of difficulty in implementing proposed actions and other problems was academic staff autonomy and a resistance to learn from the mistakes of others. All staff on the studied part-time programme were given the opportunity to attend the programme meetings and away days. The interest in these events varied. Generally, those staff who did not attend these sessions where experiences were shared, concerns discussed and decisions made, did not engage in the process and were less likely to incorporate actions into their own modules. The issue of academic staff development was identified as one that could not be easily resolved. There was an attempt to train staff but this was met by a lack of interest:

*"To be fair we did try and do something like that last time but none of the staff would come, would they?"*C4 - FG Staff 090605

However, it was thought that some staff were not reluctant to learn per se, but they did not like the process of going away and discussing issues in a focus group. Some thought that it was simply a matter of individuals going through a process that they would need to experience on their own, and then learn from that – reducing the likelihood of learning from colleagues' observations and experience or indeed sharing their own.

However, there were some positive observations from staff who did attend sessions and engage in dialogue with colleagues and implemented the observations of others in their modules, one of these examples was the implementation of a standard navigation bar for all modules on the Blackboard VLE:

> *"You know literally some lecturers have had twelve options down the left hand side. It was trimmed down to four or five options."* C4 - FG Staff 090605

One member of staff felt that the change in lecturers' development was slow and therefore required time so that all staff could manage to implement their own lessons learned:

> *"Well I think that lecturers have learned, what is the word, they are developing themselves slowly ...the individual tutors are autonomous and therefore they will do what they want to do and there is not much that can be done about that."* C4 - Lecturer F- 110505

The second issue which related to staff development was the subscription of lecturers to different pedagogic beliefs that were driving the delivery of their material and the way that they structured their module assessment.

The issue of staff development was highlighted in the first cycle of this research as part of the problem related to training on use of technology – the Virtual Learning Environment. However, the overarching issue which seems to be emerging as most problematic is the slow professional development process, which some staff engaged with more effectively than others. A similar observation is also made in other higher education institutions [see for example (Wilson and Stacey 2003)]. Although this research focuses on the implementation of blended learning, it also uncovers a number of other deficiencies in respect of staff engagement with the current literature in aspects of teaching and learning. The failure of the UKeU project identified individuality of academic staff as the biggest challenge, due to the inherent nature of academic working processes:

> *"How to ensure co-ordination while respecting the individualism, idiosyncrasy and unsystematic working processes of most academics is probably one of the biggest challenges facing e-learning promoters."* (Conole, Carusi et al. 2005:19)

The difficulties of developing academic staff are commonly recognised. For example, attending staff development workshops is not a sustainable staff development process (Biggs 1999), as when the post-workshop enthusiasm wears off, staff are likely to revert to their previous teaching styles. Student feedback can be used as a tool to facilitate the evaluation of teaching and help in staff development (Ballantyne, Borthwick et al. 2000), however as we discussed earlier, student feedback is not reliable where students are influenced by the personal attributes of the lecturer when they evaluate their teaching. Action learning offers a good basis for staff development (Ellis and Phelps 2000; Zuber-Skerritt 1990), however, as our data suggests, it depends on the individuals and whether they engage with the research process or not.

If staff development is considered as learning, we can draw on the literature and the learning theories, which advocate the student centred approach. This would mean that staff centred approaches such as continuing professional development (CPD) [for example: (Littlejohn 2002)] and approaches that see teaching as continuous research (Biggs 1999) are more able to allow staff to keep up-to-date with change and allow them to continuously improve their teaching. Peer-observations where colleagues observe each other's sessions and reflect on the practice are a valid and useful way of encouraging staff development (Kohut, Burnap et al. 2007).

The role of charisma and an individual lecturer's qualities and rapport with their students was highlighted in earlier cycles. This issue became more prominent when students were asked about their impressions of individual modules. One observation made by several students was that an important part of a module's success was related to the individual lecturer. The question 'what is it that makes a module either a good module or a less desirable one?' attracted the following reply:

> *"The lecturer. I think the Systems Analysis was good on that score certainly."* C4 - Student E – 160505

The issue of individual lecturers being responsible for the learning experience was evident in one case where a student felt about one member of staff that they were lazy and that this dictated their module delivery:

> *"With [Name], all our people are convinced that this guy wants us to pass. Having said that he is lazy, he wants us to pass because he is lazy, it is more difficult to fail a student than to pass them. [laughter]. They do agree that he seems to be on our side. [laughter]".* C4 - Student C- 170505

At this stage of the research it is difficult to recommend actions based on this evaluation. How can staff become more enthusiastic about their subject? Potentially this issue can be addressed by the peer-observation process, where colleagues could introduce the concept of the critical friend to help each other to improve (Johari Window). Another way to approach this process is to regard teaching as research, as suggested by Biggs (1999), this builds in critical reflection and opportunities for external critique for colleagues by presenting their work at conferences and in peer re-viewed publications. Based on the pedagogical ideas of constructivism, it is important to see teaching as a continuous process which builds on peer interaction. Vygotsky's concept of the Zone of Proximal Development highlights the need for capable peers to help individuals develop. If staff were not to engage with others, their zone of development is considerably smaller compared to those who actively engage in the process of continuous development.

6.3.2.5 Programme benefits – retention

This programme has experienced some dramatic retention issues. The marketing process produced good figures for the registration days but the student numbers went down as the programme progressed. The average retention rate was about 50%. If compared to some of the other online programmes, where the drop out rates can be as high as 71% or 90% (Simpson 2003:1), the figures for this programme can be considered as unsurprising. Previous issues discussed have focused primarily on the negative aspects of the course as experienced throughout the action research cycles. The focus of this section is to examine the positive aspects as perceived by those students who continued. Several perceived benefits were mentioned: these included the locality, the time of the sessions, having to come to University once a week. Some students stated that the social aspects of coming in and seeing people face-to-face each week were those things that made them choose this programme.

> *"I don't know about other people, but I feel like when I haven't done an assignment and then I find out that I am not the only one I feel like yeah… [Gesture of his fist hitting the air]"* C3 - FG Students - 71204

The social aspect was also highlighted by others (Yorke 2004). For example, the use of summer schools in distance learning programmes has been observed as the highlight of the learning experiences (Yorke 2004). The increasing technological advances allow students to forge virtual learning communities (Bell and Heinze 2004b) which can help the development of social interaction.

There was also a positive feeling of structure to the programme imposed by assignment submission deadlines, compared to the Open University where students were issued an assignment and had the flexibility to submit it when they were able to.

> *…it was difficult but here we come in, we get our assignment and we have time to do it. There is more structure to it. As I said when I did my GCSE that was never clear cut."* C3 - FG Students - 71204

> *"I looked at other courses at the Open University, but I thought, I mean you meet here once a week …."* C3 - FG Students - 71204

The role of assessment was highlighted a number of times throughout this research. Constructive Alignment (Biggs 1999) is necessary to centre students' attention and formative assessment plays an important part in the process of shaping students' expectations and providing them with steps to build on for their overall learning (Yorke 2004).

Generally at least, those students who remained on the programme felt that it was suited to part-time students. The actual content of the programme was also mentioned by one of the students since there is more business related content, something that they found useful in the way that it relates to the real world. One student observed that when he enrolled on the programme he was not aware of the online element, but having experienced it he felt that it had been of great benefit:

> *"I would say what this course offers, that say the Open University doesn't is the face-to-face meeting, rather than Blackboard itself. You probably need to keep a tool like Blackboard to keep the part-time class together but it is not the selling point, it is not the major focus."* C4 - Student C- 170505

Overall, the reasons why students chose the programme and what made it stand out for them, could potentially enable it to attract more students and enable better student retention. The reasons for student attrition observed on the current programme are in line with the reasons recognised by others, these include: students' sense of belonging, student engagement, marketing, the social aspect and assessment (Simpson 2003; Yorke 2004). The data suggests that blended learning has had a positive impact on student retention. Similar findings are reported in other courses where blended learning was perceived as a positive improvement to the course delivery [see for example: (Hughes 2007)].

6.4 Summary

This Chapter has focused on providing a rich description of the events that took place during the last two cycles of this action research. Overall, 11 themes were discussed as summarised in Table 21: Summary of the third and fourth action research cycles. Using the action research structure of implementation & monitoring and evaluation & planning, this Chapter has described the main issues as perceived by the author. Through the use of direct quotations from transcripts, participants were given an opportunity to 'speak out' and share their observations of programme related issues and their views on how the programme could be improved. The observations are related to the literature and similarities and differences between these are highlighted.

The research focus in this Chapter was on the programme and its pedagogical foundations. The Conversational Framework and learning by doing were two theories that were subscribed to and implemented on different modules. The findings were mixed and highlighted limitations in these theories. The personality of the lecturer delivering the modules has emerged as being significant in facilitating student learning. The role of assessment and social interaction to motivate students' learning were some of the main findings of these cycles. The use of the Virtual Learning Environment to facilitate e-learning was explored, discussion boards have proven difficult but have enabled the social interaction of students on the programme. The main issues that emerged from the last two cycles of action research are highlighted in the table below.

Although there were a number of other issues highlighted and acted upon during this research, it is the author's interpretation that the above issues allow a better understanding of our

implementation of blended learning. One of the overarching issues emerging is that the implementation of blended leaning is context bound and heavily dependent on the people and infrastructure involved in the process.

The next Chapter will draw all action research cycles together and examine them as a whole. Themes that emerged from the second analytical step, which was facilitated through QSR NVivo, are discussed in detail.

Summary of the third and fourth action research cycles		
	Cycle 3	***Cycle 4***
Academic year and semester	2004/05, Semester 1 cohort 1 and cohort 2	2004/05, Semester 2, cohort 2 and cohort 1
Observed module/s	- Project Management (cohort 1)	Systems Analysis and Design (cohort 2)
Simultaneous module/s	- Databases (cohort 1) - Management Business Operations (cohort 2) - Programming Business Information Systems (cohort 2)	- Visual Programming (cohort 2) - Systems Production (cohort 1) - Networking (cohort 1)
Emerging issues	Carrot and stick Learning tools infrastructure VLE nice lifeline Students' confidence Learning location Face-to-face session usage	Learning objects – SkillSoft Learning tool infrastructure - Car parking Student Community Staff autonomy Programme benefits – retention

Table 21: Summary of the third and fourth action research cycles

Chapter 7 Stage 2: overall findings of current research

7.1 Introduction

The previous two chapters described the four cycles of action research, which were undertaken during the two years of this study. The two former cycles were concerned with the practical issues of the implementation of blended learning drawing on factors such as communication on the programme, whilst the latter two cycles were concerned with pedagogic practice and learning location, focusing on issues related to students' learning.

This Chapter focuses on the second stage of data analysis which draws on all the data collected during the current study. This analysis is focused by the research sub-questions that draw on the blended learning concept, pedagogy and pragmatic issues as highlighted in Figure 32: Conceptual framework: Chapter 7.

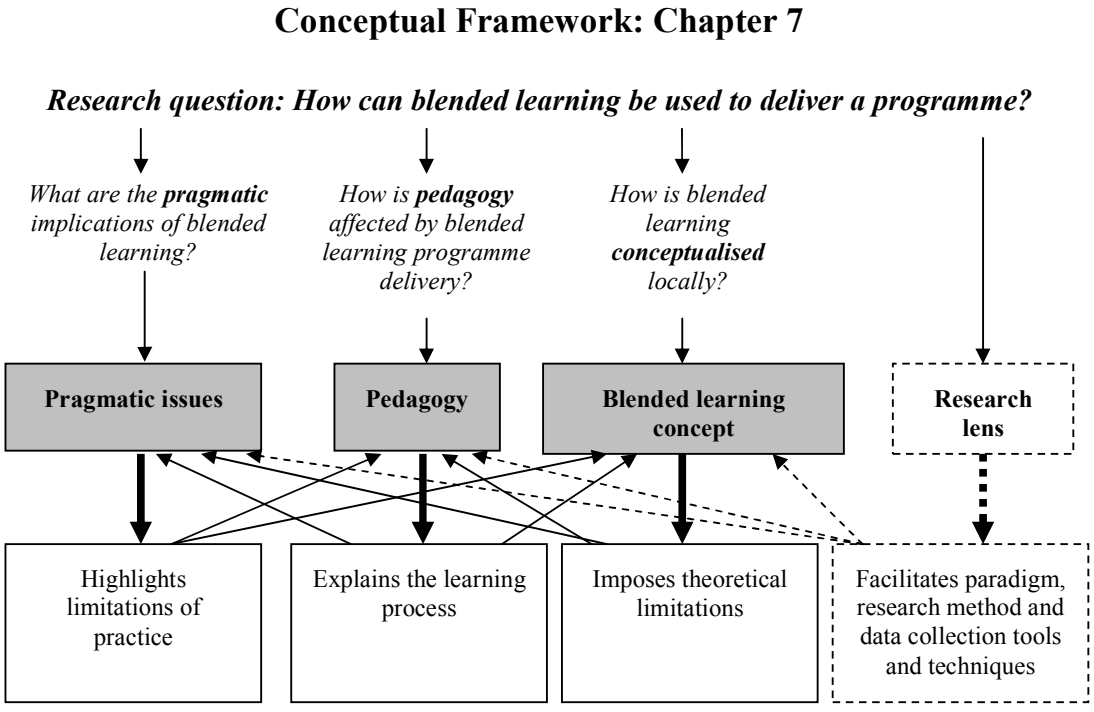

Figure 32: Conceptual framework: Chapter 7

In relation to the blended learning concept research sub-question, the emerging **Fine Structure of the Blended Learning Concept** will be described drawing on the data collected. The Fine Structure of the Blended Learning Concept is based on six tree nodes and identifies three nodes that relate to the learning context and three nodes that relate to learning. The learning context nodes are: the learner (in our case the part-time student), the overall programme issues and the pedagogic beliefs of the 'teacher' in charge of facilitating the learning. The nodes related to learning are: face-to-face facilitated learning, e-facilitated learning and self-study. In relation to the research question aiming to understand the blended learning pedagogy, three inter-related **Key Issues of Blended Learning Pedagogy** are identified, these are: communication, social interaction and assessment. In relation to the research sub-question focusing on the pragmatic issues of blended learning, the analysis identifies three inter-related elements of the **Bermuda Triangle of Blended Learning**. These are essentially the learning nodes of the Fine Structure of the Blended Learning Concept and comprise: face-to-face facilitated learning, e-facilitated learning and self-study.

This Chapter is sub-divided into five sections: the first section introduces the local blended learning concept - Fine Structure of the Blended Learning Concept - which provides the overview for the second stage of data analysis. The following sections of this Chapter build on this overview and provide more details. The second section expands the nodes that relate to the *learning context* and the third section details nodes related to *learning*. The fourth section crystallises the three Key Issues of Blended Learning Pedagogy. The fifth section distils the pragmatic issues of the Bermuda Triangle of Blended Learning, which are essentially the *learning* nodes of the Fine Structure of the Blended Learning Concept.

7.2 The Fine Structure of the Blended Learning Concept

Having gone through the analytical process of all action research cycles, all the data collected through focus groups and interviews was transcribed and coded using QSR NVivo software. This post hoc analysis process resulted in 211 nodes, which represent the ideas and issues in relation to the local concept of blended learning. These nodes were then logically grouped into six main themes which describe the implementation of blended learning on this programme. These six themes are graphically represented in Figure 33: The Six-Themed Blended Learning Concept.

Generally, this concept breaks down blended learning into two main sections: Learning (Nodes 4, 5 and 6) and Learning context (Nodes 1, 2 and 3). The emergent blended learning concept incorporates the face-to-face facilitated learning (Node 4), e-facilitated learning (Node 5) and self-study (Node 6). The double arrows between these three indicate their strong inter-relationships. The face-to-face facilitated learning and e-facilitated learning are positioned at the upper level of the figure, indicating a higher level of observation from the staff perspective. Nevertheless, self-study is equally important when considering the learning process from a student's point of view.

The learning related nodes are set in context by the profile of a part-time student (Node 1), overall programme issues (Node 2) and pedagogic beliefs (Node 3). It is assumed that students are interested to go through the blended learning process and achieve a degree classification indicated by an arrow from Node 1 towards an ellipse representing the degree classification. Unfortunately, due to a high drop out rate (approximately 50%) a number of students did not complete this process. A metaphor will be used to draw out the richness and complexity (Miles and Huberman 1994:250) surrounding this. The metaphor for the learning process will be 'Bermuda Triangle of Blended Learning' since students are being 'lost' from the programme. As depicted on the figure, inside the Bermuda triangle of blended learning are the last two themes: overall programme organisation (Node 2) and pedagogic beliefs of the member of staff teaching a specific module (Node 3).

The Six-Themed Blended Learning Concept

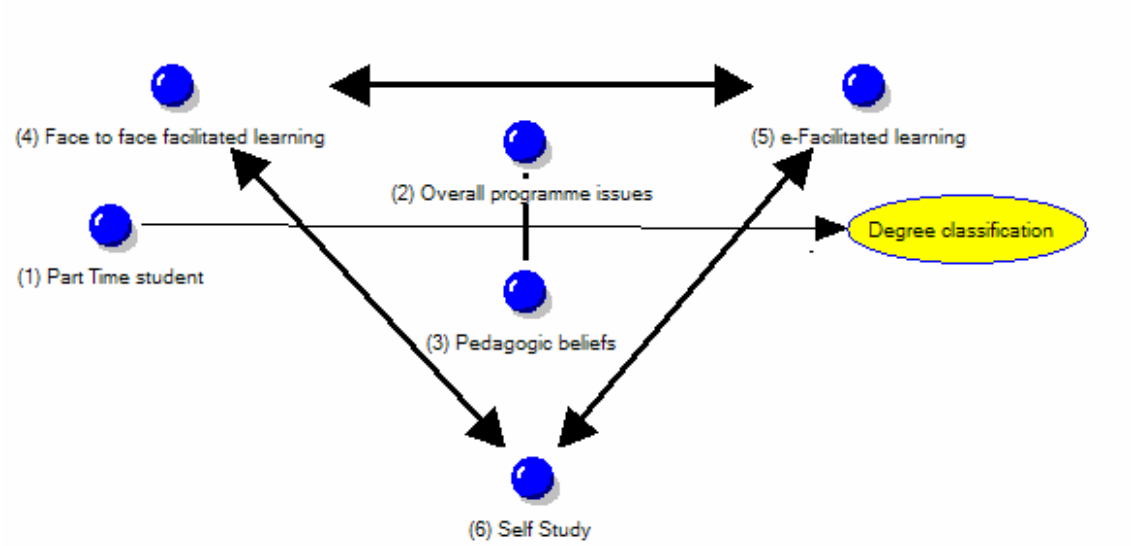

Figure 33: The Six-Themed Blended Learning Concept

All six nodes are interrelated, but learning, on this part-time blended learning programme in particular, is an activity that revolves around the three nodes of face-to-face, e-facilitated learning and self-study. Any discussion about blended learning is very context bound and as highlighted in the proposed blended learning concept there are a number of variables that influence blended learning implementation. Therefore, this concept offers a structure for the discussion of blended learning and should not be seen as a rule.

The theme branches in the concept depicted above are summarised in the following table (see Table 22: Summary of the blended learning emergent themes and main branches):

Summary of the blended learning emergent themes and main branches	
Main theme	**Theme branches**
(1) Part-time student	(1 1) Compatibility study and work (1 2) Retention or drop out rate (1 4) Disparities of learners' knowledge (1 5) Enthusiasm and motivation (1 9) Full time vs part-time students (1 10) Mature students (1 11) Part-time student needs
(2) Overall programme issues	(2 1) Administrative issues (2 5) Course layout (2 2) Course content (2 11) If not virtual more time in Uni (2 12) Induction (2 16) Support structure (2 17) Course marketing (2 13) Learning tool infrastructure
(3) Pedagogic beliefs	(3 1) Staff views (3 2) Student views (3 3) Pedagogy related issues (3 7) Assessment (3 5) Implications for practice (3 6) Communication (3 4) Local blended learning theory (3 8) Culture of higher education learning
(4) Face-to-face facilitated	(4 1) Too much theory in the lectures

learning	(4 3) f 2 f contact difficulties (4 4) Interacting in class (4 5) face-to-face sessions time usage (4 6) boring lectures death by PowerPoint (4 7) face 2 face depends on individual
(5) E-facilitated learning	(5 1) Poor online comms induction (5 2) Good communication online (5 3) VLE usage (5 4) Online sessions (5 5) Communication delay (5 6) Connection speed (5 7) e-Communication issues
(6) Self-study	(6 6) Independent learning (6 7) Study time expectation – self-study

Table 22: Summary of the blended learning emergent themes and main branches

The proposed concept of blended learning incorporates the three teaching context related aspects [student (1), pedagogic beliefs (3) and programme issues (2)] and highlights the issue of the learning location as a factor in the blend. The following sections will explore the first three nodes in more detail to allow the reader to understand the data reduction undertaken.

7.3 Learning context: The Fine Structure of the Blended Learning Concept

The previous section provided an overview of the six nodes that conceptualised blended learning on this programme. This section will outline details on the first three nodes, focusing on the context of blended learning. These nodes represent themes related to part-time students, pedagogic beliefs and programme issues.

7.3.1 Part-time students

The first node of the blended learning concept is the part-time student (Node 1). The part-time student theme is one of the context themes that would differentiate the implementation of blended e-learning in this setting from any other. Issues coded in this theme are generally related to part-time students as identified on this programme.

The nodes are structured in a tree hierarchy. Each node can be identified by a number; the first digit refers to the first level which is the Part-time student in this case and the subsequent digits indicate the branches of the tree. For example (1 1) is the first branch and (1 2) is the second. In this case the tree is four branches deep, which is indicated by four separate digits for the deepest node. For example, node (1 5 8 1) Communities of Practice is the level four node. Due to the multiple analytical processes applied to the data and the limitations imposed by the software, the numbers are not always sequential. For example, node (1 1) is followed by (1 2) and then (1 4). This does not mean that there is a node (1 3) which is not represented on the diagram. The node (1 3) might have been there initially but was moved to another tree resulting in a sequence gap. Since the software is not able to automatically update all numbers it was perceived as not being essential to get all the numbers in sequence. The main purpose of the numbers is to provide a uniquely identifiable node within a tree. We will now explore the (1) *Part-time student* node tree based on the seven branches as outlined in Figure 34: Part-time student theme.

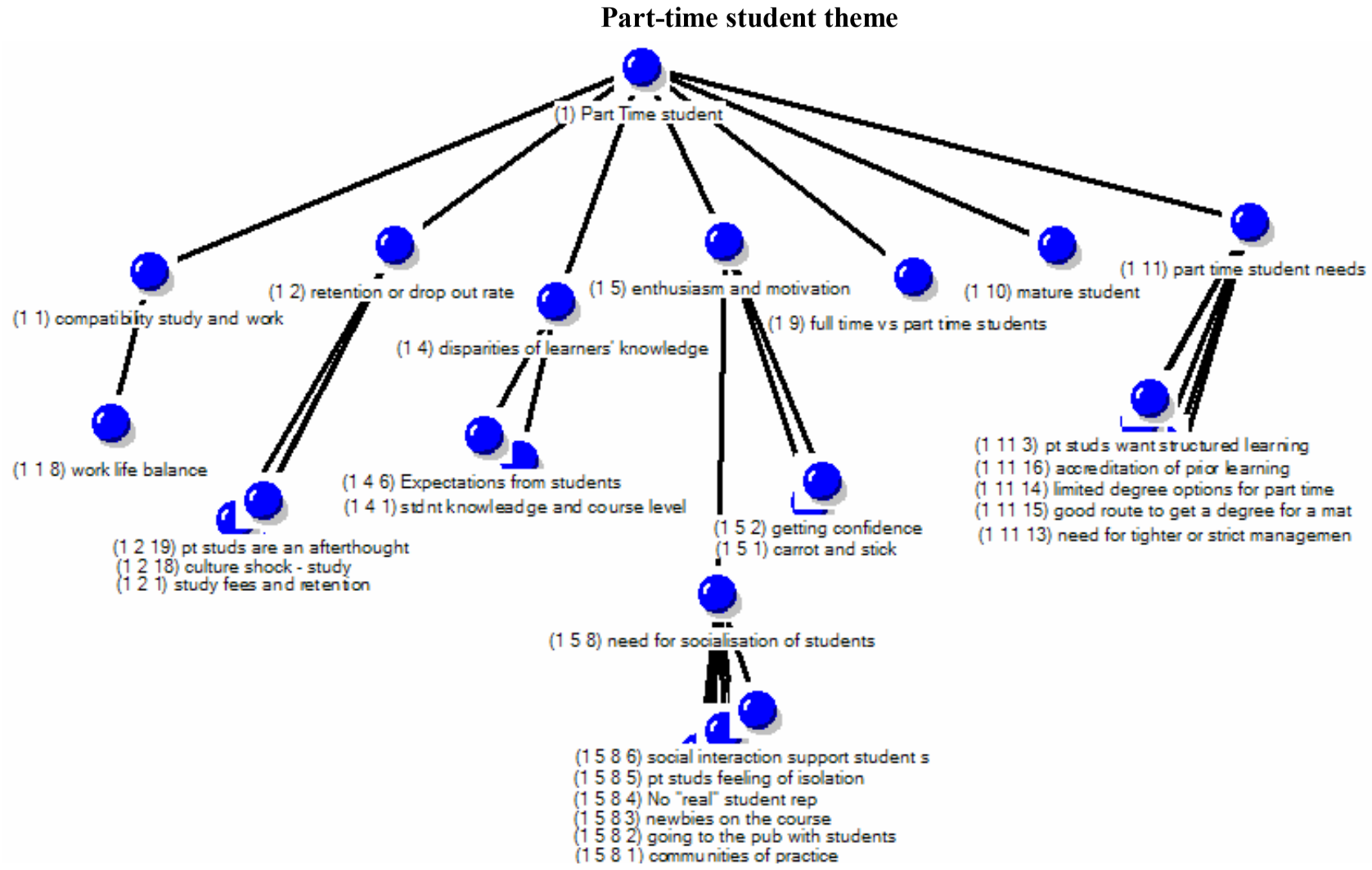

Figure 34: Part-time student theme

7.3.1.1 Compatibility study and work

Node (1 1) *compatibility study and work* refers to the issue of students facing the balancing act of working whilst also studying for a degree. The data suggests that responsibility for work and study proves a challenge which not many students can overcome. This can be seen from the following quote of one of the students who left the programme:

> *…This is due to extra workload at my job that means that I would not be able commit the required amount of time and effort"…* C2 - Leaves - 200304

A related issue that emerged was the (1 1 8) *work life balance* for part-time students who have families and other commitments which affected their ability to study. In this case 'work' is the term used by students to refer to the work that they have to put in for their studies.

7.3.1.2 Retention or drop out rate

The second branch of the (1 2) *retention or drop out rate* is closely linked to the first issue and the observation that there is a high drop out rate in particular on this part-time programme. The following quote illustrates the issues identified in this node and the feeling that the drop out rates are in line with other part-time student programmes:

> *"I mean we obviously haven't done very well but this is not particularly abnormal for the part-time students."* C2 - FG Staff - 20704

Specifically, there was a node that captured the feelings that part-time students were not the main focus of the institution. This was seen in a number of ways, for example with regard to the provision of appropriate infrastructure, which was geared up for full time students. Therefore, the provision of part-time programmes using facilities and infrastructure for full time students was not adequate (1 2 19) *pt students are an afterthought*. Some students were unable to get over the (1 2 18) *culture shock of study*.

7.3.1.3 Disparities of learners' knowledge

The drawbacks of part-time study were particularly evident in the disparity of learners' knowledge (1 4). This highlights the variety of backgrounds of the students on this

programme. For example, because this course is predominantly attended by mature students, there might be a situation where a network administrator is sitting next to a total networking novice. This can be illustrated by the following quote:

> *"The problem is that the moment you put up your assignment on networking or something, you get some networking wizards and they will be off and somebody else is going along and saying what the hell is this?"* C2 - FG Staff - 20704

Both students can become frustrated as the former is bored and the latter is overwhelmed. It is unreasonable to expect that all students would have a similar background and knowledge but on this part-time programme this characteristic is particularly evident.

7.3.1.4 Enthusiasm and motivation

The fourth branch of the part-time student characteristics is (1 5) *enthusiasm and motivation* node. This has several branches, which incorporate some reasons why students carry on with their study and illustrates what motivates them. The following lecturer outlined the importance of student enthusiasm and the particular need for it on a part-time programme:

> *"... personally, when I interview a student for this course, the first thing that I am really interested in is their enthusiasm. Because I think that some things i.e. lack of experience with university exams or how to write an essay, I think those things are possible to overcome but I think if you haven't got the enthusiasm to see you through all the moments when you consider giving it up... I doubt that there is a part-time student who hasn't considered giving it up"* C2 - Lecturer C - 100604

(1 5 2) *getting confidence* documents the observation that several students were not very confident in their own abilities and were easily disappointed and discouraged. Potentially, this caused some of them to withdraw from the programme. There was a feeling that student confidence increased with time, when students got to know each other and began seeing positive feedback through their assignment marks. The assignments were perceived as one of the major sources of students' motivation to study (1 5 1) *carrot and stick.* Another dimension to motivation was the perceived need for the socialisation of students [(1 5 8) *need for socialisation of students*]. In particular, this was evident in students' comments making comparisons with distance learning programmes and the fact that students liked to speak to other students and lecturing staff in the face-to-face sessions. Not all students were interested in social events, but there was a feeling that the common aim of getting a degree united a

number of people who were then able to build their support networks. The node (1 5 8 5) *feeling of isolation* documents the negative feelings that students had that they were on their own trying to cope with the study, which was difficult. Therefore activities such as (1 5 8 2) *going to the pub with students* were perceived as positive and encouraging the study process.

7.3.1.5 Full time vs part-time students

The next node is still interrelated with previous issues, that of part-time students being a special case and different from full time students. It is documented in node (1 9) *full time vs part-time students.* This comparison was used by staff predominantly in their descriptions of their practice of teaching part-time students compared to the full time students. Whilst some staff felt that the full time students were more committed to study, there were others who felt that part-time students were similar to the full time students, as illustrated in the following two quotes:

> *"I think the [part-time] students are more committed to the course."* C4 - Support A - 190505

> *"they [part-time students] didn't seem to be noticeably more vocal or more intelligent or anything else than the undergraduate ones that I've been doing…"* C4 - Lecturer H - 270505

7.3.1.6 Mature student

The (1 10) *mature student* node coded the impressions that part-time students were predominantly more self sufficient and clear about what they wanted to achieve as a result of study on this programme. Because of their ambitions they also had high expectations of the teaching staff, who found part-time students particularly demanding:

> *"I find part-time students, particularly mature students, far more demanding and discerning."* C2 - Lecturer J - 310804

Because of their maturity many students found themselves out of their comfort zone when they were asked to produce assignments or sit exams. It is a long time since some of these students left school and therefore these were alien concepts to some of them and left them with feelings of insecurity.

7.3.1.7 Part-time student needs

The last branch within the part-time student node is the (1 11) *part-time student needs* branch and characterises some of the needs that were identified for these students. Firstly, due to the limited contact hours and the busy lives of part-time students there was a feeling that well structured learning (1 11 3), that provided students with clear expectations, intermediate deliverables and feedback, was desirable. This observation can be seen in the following quote:

> *"For lecturers we have to see ourselves as facilitators, we have to take into consideration those time constraints I have just referred to, and we have to make the learning structured, sequential; and in terms of the assessment I think it needs to be structured and sequential. For me on [module name…] I will break down the assignment I would give to full time undergraduates and maybe break that in half. So maybe the assessment or exam that was 50%, rather than give them this big assignment I would say right, I am going to give assignment one and assignment two and then it's not as overwhelming."* C2 - Lecturer J - 310804

Such a structure would allow better management from the learners' point of view (1 11 13). Secondly, there was a feeling that the conventional process of students' entry based on their qualifications was inadequate. The accreditation of prior learning process that allowed students to join the programme based on unconventional learning was more applicable. There were also a number of comments that suggested that the given programme already offered a good route to a degree for a mature student (1 11 15). Finally, there was a perceived limitation of options of part-time student degree choices in this University, for example if students wanted to study accounting and information technology, they would not be able to do so on this programme.

The next section will focus on overall issues associated with the implementation of a programme. This theme encapsulates all general programme related issues.

7.3.2 Overall programme issues

The previous section provided an overview of coded themes specifically related to the part-time student. This sub-section will explore the second theme of overall programme issues. This theme (2) *Overall programme issues,* comprises nine branches as depicted in the figure below (see Figure 35: Overall programme issues theme). These nodes include themes that

highlight some of the complexities involved in operating a part-time blended learning programme. The following text describes the main branches of this tree.

Overall programme issues theme

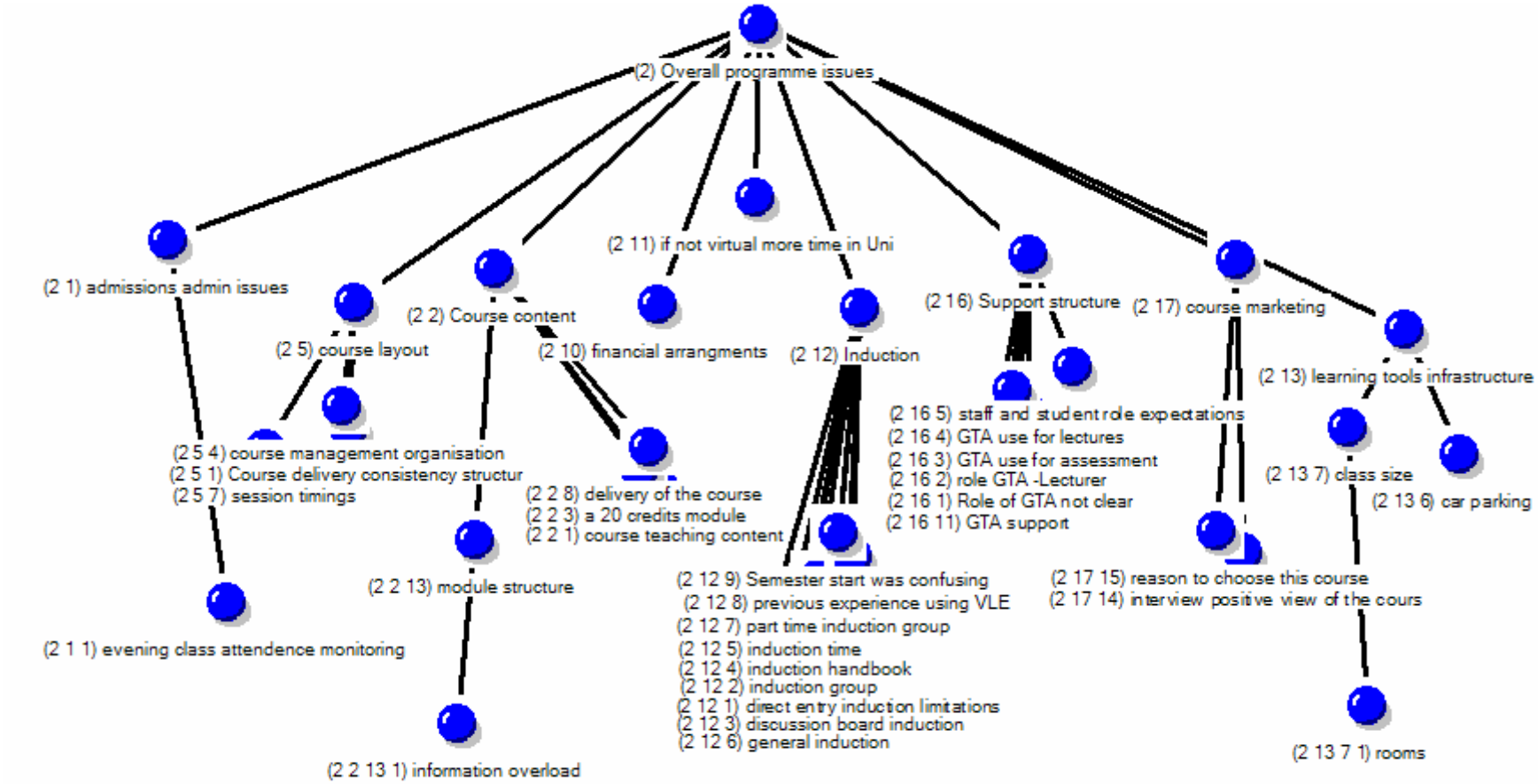

Figure 35: Overall programme issues theme

7.3.2.1 Admissions admin issues

An issue that was highlighted by the administrative staff, was the difficulty of determining at what date a certain student registered and when they left the programme (2 1). Since there is a need for evidence in order to support the charging of fees, it was perceived as reasonable to rely on the evening class attendance registers (2 1 1) in order to determine whether a student was on the programme or not. This issue is closely linked with the financial arrangements (2 10), where students would be charged up to a certain date when they are on the programme, dependent on when they last signed an attendance register. There were some views on whether the online attendance could be classed as attendance for the registration data:

> *"…because if they were just going to be attending online, it still needs to be monitored. From a quality point of view and from the fees point of view, because those discussions can get quite vociferous about when they last came and when they should be last paying fees."* C2 - FG Staff - 20704

This emphasises the need for attendance registers in the evening sessions.

7.3.2.2 Course layout

The course layout (2 5) node contains the points from the debate about the way the programme could be structured. In order to make this programme one that used blended learning, one of the main changes was to reduce the face-to-face contact hours to 3.5 - 4 hours per week and rely on online interaction for the rest of the programme. The difficulty exposed here is getting the balance right between too much attendance, which students can't afford time wise, and not enough attendance with the result that students don't get the direction and support required to pass individual modules. In the first cycle of action research, subjects alternated every week. This formula was not popular with the majority of students so it was changed in order that students could be exposed to every subject every week but alternating between the first or second slot. The alternation was required since some students were always late due to work commitments and others always had to leave early due to personal commitments.

Generally, the students' feeling (from the first cohort in particular), was that alternating two modules per evening was the most effective structure, although there were some individuals

who preferred to have a 3.5 - 4 hours slot per subject per week. However, the staff point of view was different. There were several staff who for personal reasons were not able to stay late every week, although there was a GTA and a lecturer for most subjects. There were some members of staff who were teaching one full time class at 9:00 in the morning on the day and then nothing until another class from 16:30 to 18:30, with this timetable they felt that it was difficult to concentrate and facilitate a class with very enthusiastic students.

In addition to the timing of the session the issue of inconsistency on the programme (2 5 1) was also raised. This inconsistency can be seen in the following quote from a student:

> *"Well the first year was structured a lot better than the second year. The second year seems to be ad hoc; maybe it is just the style of the lecturers."*C4 - Student D- 160505

The lecturers' autonomy and their judgment on the structure of module delivery influenced their practice, and this did not always take into account students' views. The autonomy and no 'one consistent structure' for the evening sessions meant that each semester the two lecturers concerned had to negotiate the format of their semester, resulting in inconsistencies from semester to semester.

7.3.2.3 Course content

The consistency issue is further reflected in node (2 2), this is concerned primarily with the content of the programme and its applicability to the blended learning format. In some cases students felt overloaded with information, node (2 2 13 1), but on the other hand the modules were of 20 credits meaning that around 200 study hours were expected of them. Some participants felt that if the programme was 'diluted' by reducing the credits per module, it would cause a number of difficulties, one of these being that the degree would take more than five years to complete. Another issue raised here is the worthiness of the programme:

> *"The only thing that I am worried about is that at the end of it, you know after four or five years, I will have a paper which is not worth anything."* C4 - Student A – 170505

7.3.2.4 Support structure

The support structure (2 16) on the programme involved the use of GTAs, a practice which was also implemented for the first time on this programme. The assumption was that the

GTAs would be able to help with routine support enquiries, such as help with practical work etc. Since the GTA scheme was implemented at the same time as the new programme, there were some conflicts and misunderstandings evident particularly in the first cycle of action research, since the interpretation of the role of the GTA was not clear. Through the cycles the role was negotiated on a lecturer by lecturer basis, and it was agreed that the GTAs would be able to complement the lecturer but not replace them when it come to teaching. GTAs were involved in almost all aspects of teaching, which provided them with a 'full picture' from module design to implementation and evaluation. An additional benefit brought by the GTAs was that they were consistently involved with the programme over a number of cycles, whereas lecturers varied each semester. The knowledge of a familiar face from whom to get support benefited the students. Being able to get help from lecturers was also felt to be appropriate by some as illustrated by the following student quote:

> *"…the lecturers have said that if you need to see me for any reason you can, which is very much open, so really it is good which means for the students that facility is there if you need it. I haven't actually used it but I certainly know it is there. Unless people don't take it on board you know we are on a part-time course, the lecturers can't be here all the time you have to appreciate that."* C4 - Student B- 230505

7.3.2.5 Induction

Similar to the support structure, the induction node (2 12) had particular importance on this programme. Although processes of student induction were not new, induction was perceived as being critical for this part-time degree. On a full time programme the induction is spread out over a week, whereas here the only timeslot is a four hour session. The social issue and the necessary skills for the programme were also highlighted in relation to the induction session:

> *"[Name] did this for the mature students' induction, and I mean that was a fantastic thing. [students have] met one or two first friends there who have lasted throughout the degree and if you get them to set out so that they know how to send emails in the morning or so. …they leave the induction session with a sense of "Oh I have done something", the Blackboard and thing. Yeah, they know exactly what they need to know. I think it would be boring if you have taken an afternoon off work and somebody is talking to you of what a PMC is, as long as they do know where they need to go to look for the information if they do need it we are on a winner there."* C4 - FG Staff - 90605

There were also a number of technical issues such as access to the VLE and the ability to use online resources for those who attended only once a week. A number of improvements have been implemented throughout the cycles. The main change was to spread the induction process out from the moment a student gets in touch with the University about the programme right until the end of the first semester. This meant in practice that at the registration, students were asked to validate their email accounts to make sure that they had access to the system. Modules delivered in the first semester therefore incorporated elements of basic information communication technology (ICT) skills required. In the year when the research ended, the action was to implement an entire module that focused on Research and Information Technology Skills (RITS). The RITS module incorporated elements such as group work online, discussion board collaborations, use of communication tools and techniques, and a number of necessary research skills such as the use of Harvard referencing notation. Overall, there was good progress from the first cycle to the end of the fourth, which allowed staff and students to learn about the needs of part-time students on this programme.

7.3.2.6 Learning tool infrastructure

Generally, there were still some issues with learning tools infrastructure (2 13). Although the general induction was successful in resolving 'teething' issues of the programme, the modules taught on the programme incorporated a number of different software tools which were available for on-campus access only. Some modules also allowed the installation of software on home computers of a certain specification, resulting in some students having to upgrade their computers in order to carry out their coursework. Generally there were issues with practical assignments:

> *"I don't know if the practical assignments work very well with the part-time students, that would be my opinion, not team ones anyway and the problem is that they have to do these on site because of the network."* C4 - Support A - 190505

The above quote illustrates just one of the observations which highlight the difficulty with the practical work that could have only been completed on campus due to technical limitations. A number of issues raised by the students were related to general learning tools infrastructure related to software and hardware, however there were also issues of access to classrooms. In particular, one problem emerged when inner campus car parking (2 13 6) in the evenings was made stricter. One of the tutors negotiated a special deal for part-time students with the

University of Salford car parking service. This deal was then open to the rest of the University of Salford staff and students who were allowed to purchase a parking permit allowing them to park on one week day only, instead of purchasing a whole week permit. The class size (2 13 7) also became an issue with some of the students on the first cohort, where initially there were about 40 students and it was difficult for all of them to get some feedback or help from staff. This problem was mitigated by the introduction of some group work but still remains an issue for individual work. Students were not able to get more specific help due to the limited face-to-face session time. In some cases resolving a technical problem took about 20 minutes and therefore other students were left waiting with their difficulties. The second student cohort was much smaller (about 12 students) which could be the reason why provision of support was not a pressing issue for them.

The third theme that illustrates the context of blended learning is pedagogic beliefs. These beliefs will be explained in detail in the following sub-section.

7.3.3 Pedagogic beliefs

The two previous sub-sections have focused on the characteristics of the part-time students and overall programme related issues. The third main theme that describes the learning context is the pedagogic beliefs. This theme concentrates on the way that the teaching on the given blended learning programme was facilitated and will be explored drawing on the eight branches of (3) *pedagogic beliefs* (see Figure 36: Pedagogic beliefs theme). The issues that were drawn out in this theme are the staff and students' representations about the learning and teaching practices on the programme.

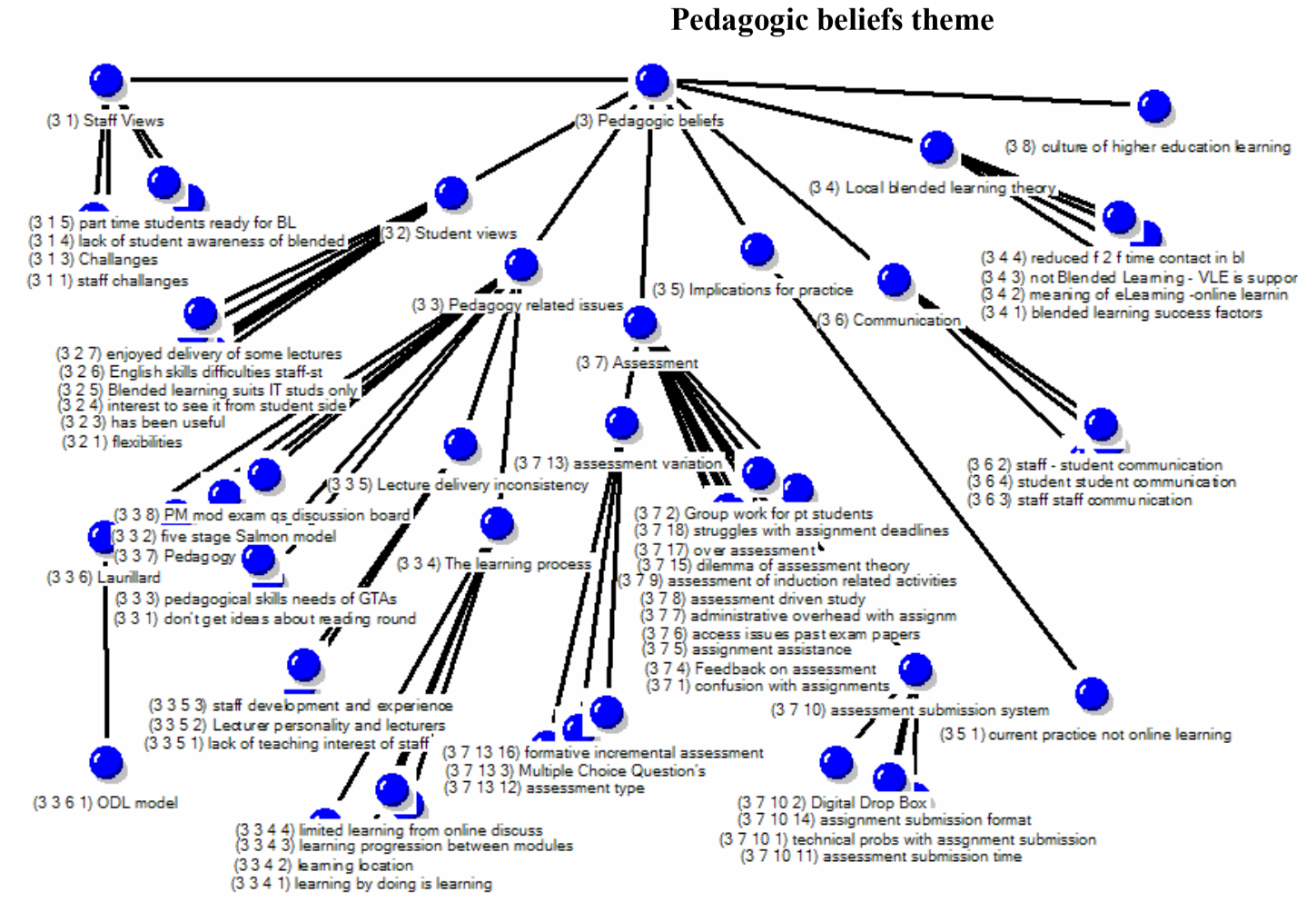

Figure 36: Pedagogic beliefs theme

7.3.3.1 Staff views

The first node (3 1) within this section is concerned with staff views of the programme and related challenges (3 1 3). Some of the participants saw the delivery of this programme as a challenge since there were a number of new factors, requiring learning from a staff point of view. When asked about being prepared for blended learning one of the lecturers replied:

> *"If blended learning is just the mix of traditional learning plus the use of Blackboard, then I don't perceive a problem in terms of preparation. The first year and the first few weeks are going to be difficult, actually to start learning Blackboard, is taking time up if you like, it is an additional commitment now. Because you are going out now delivering lectures and having tutorial sessions, etc. you now have another demand on your time, that you have to put a lot of work in on Blackboard, that is going to take time, but you'll probably become better at it ..."* C2 - Lecturer J – 310804

The above comment exemplifies the attitude towards blended learning when starting a new module on the part-time programme. This reveals a somewhat simplistic attempt to interpret blended learning as simply the introduction of a new technology, which places yet another demand on to the lecturer's time.

7.3.3.2 Student views

When it comes to student views, there was a real lack of awareness of blended learning (3 1 4). This is despite it being mentioned in the advertising literature. However, those students who stayed on the programme were positive about blended learning (3 2 3). In particular, some of the students felt that blended learning is particularly suited to an information technology related degree (3 2 5). The doubt as to whether blended learning would suit students on other programmes was expressed in the following quote:

> *"I think that most people or probably 80% of us here have a fairly good idea about the emails, digital transfers etc. but this is just because we are coming from this type of background, we have discussions between ourselves to try and get stuff to you, I mean the University, but most people won't have any idea how it worked or would have problems with it, I am not sure if it would work on any other course that is not information technology related. A lot of people here have got websites, and they know bits and pieces."* C3 - FG Students - 100105

However, there were also some negative comments, which were not specifically aimed at blended learning but towards individual lecturers involved on the programme. Some observed that the lecturers' standards varied and therefore the student experience was mixed.

7.3.3.3 Pedagogy related issues

When it comes to pedagogy related issues (3 3), there were a number of different views subscribed to by the members of staff. Some of the theories explored on this programme were 'learning by doing', Conversational Framework, constructivism and Communities of Practice. The emerging impression is that there is more than one pedagogical foundation that can be used for the delivery of a blended learning programme. Generally, there were some observations by the students that the learning process entailed more than simply attending lectures:

> *"The learning process is threefold: Learn from lecturers in the class/labs; Learn on your own with handouts/books/search engines; Learn from other students when in discussion groups…"* C1 - Meeting - 291003

The success of a module as perceived by the students was influenced by the individual lecturer and their personality and their style of delivery. The lecturers' competence and their enthusiasm were highlighted in the following quote:

> *"It is difficult, because they have to a) know their stuff and b) be enthusiastic about it. Otherwise students are going to think hell he is boring, I am going to sleep now. If you look at … I am trying to think of an example… I can't think of a specific topic but, people respond better to somebody who is enthusiastic than to somebody who is "Well I think that neee neee" [pronounces it in a slow way]. Why is it that Delia Smith the TV chef is as boring as hell to watch?"* C3 - Support F - 30305

There were also some value reasons that might influence people's perception of teaching, and one of these is the perceived unimportance of teaching an undergraduate degree. Some staff commented that undergraduate student teaching is not as interesting as research and therefore some academic staff tended to concentrate their efforts on research:

> *"People aren't interested in teaching, you haven't learned that yet, the people in the Institute are not interested in teaching… That is why there are not that many students on the undergraduate courses. Honestly they are not. If you look at it, the fundamental problem is that there are certain people interested but generally you will probably find*

> *that people are not… People are more interested in research, and a lot of people just don't like undergraduates, basically. Undergraduate teaching is considered as second class."* C3 - Lecturer G – 80205

The above quote highlights the impression of one of the staff who felt that teaching undergraduate students was under valued by several colleagues. Academic autonomy was perceived as an opportunity for some staff to hide away from teaching and there was not much that could have been done to change these individuals:

> *"I have to say, that sometimes students will pick up on delivery style, and there is nothing you can do to change a person…"* C4 - Lecturer B – 200505

The process of learning has also generated some different views. There was a predominant view that in higher education there is a need to develop independent thinking and decision making (3 8). This translated into coursework activities that have no one single right answer and required the students to learn by engaging with different options and formulating their own arguments. "Learning by doing is learning" (3 3 4 1) was one view that subscribed to the belief that there was a need to actually apply the theory in practice and in particular in IT related subjects. There was a perceived need to expose students to the theory and provide some guidance but essentially students were expected to find their own way.

Some staff were able to engage with this process but others took the 'learning by doing' approach simply to mean their own learning of Blackboard Virtual Learning Environment. Unfortunately, this resulted in several staff making the same mistakes again each time a new member of staff was involved on the programme. This consequently led to time wastage. Due to the lack of communication with colleagues and an unwillingness to learn from others, there was a feeling that some staff were slower in developing themselves since every lesson had to be learned from personal experience. On the other hand, others who were more willing to engage with the process and incorporate lessons learned found that they were much better placed in their situation.

7.3.3.4 Assessment

An area closely related to pedagogy is that of assessment (3 7). Generally, there was a consensus that assessment played a major part in motivating students to actually engage with

certain learning activities. Unless these activities were assessed, the majority of students were observed not to complete the required work:

> *"I would suggest, what I tended to do was do a formal lecture when they came in, not every time but that is what I ended up doing, because it seemed to be the only thing that worked. I found that when I asked them to read or do something and then expected them to come in and be ready to discuss it, they hadn't read it or they just hadn't done it. So you had to tell them things before they could discuss it."* C2 - FG Staff – 20704

For those modules where the assessment process was broken down into several intermediate deliverables some students felt that they were over assessed (3 7 17), and they therefore struggled with the assessment deadlines. It was also felt that group work that was conducted for assessment was causing some difficulties (3 7 2), hence group assignments were not always welcomed by all students.

The programme experimented with several types of assessment. Some modules used portfolio type work, where one portfolio had to be submitted at the end of the module, others used reports, presentations, electronic discussions, multiple choice questions and exams. Generally, students felt that they preferred to have multiple assignments within each of the modules so that they were able to get an insight into their progress and did not rely on any one particular piece of work.

There were also some technical issues regarding assessment submission. For example, the electronic submission as facilitated via Blackboard VLE was possible using two different methods: the assignment manager (3 7 10 14) and the digital drop box (3 7 10 2). These were associated with technical problems and produced confusion amongst staff and students. Despite staff agreement to use the assignment manager for any electronic work submission, this was not followed through by all on the programme and resulted in confusion. However, the flexibility of the programme was enhanced by allowing electronic assignment submission and thus submission deadlines of midnight were very popular with students, allowing them to work until the last minute to submit their work.

7.3.3.5 Implications for practice

When considering the teaching methods on this programme, some staff adopted the approach of learning by doing. This meant that their teaching practice was based on experimentation with various tools and techniques which were offered by Blackboard:

> *"…and the Blackboard and the discussion board, and the multiple choices and the SkillSoft. I am just trying all these things together to see what happens, see what works and what doesn't work."* C3 - Lecturer G – 80205

Some staff expressed their reservations on the level of online learning that is facilitated on the programme:

> *"…I don't think that we offer online learning; I think that we present the lecture, we put material online and they go and get it. But you know maybe I'm getting something wrong, I don't think it is online learning, you know you said it is like a screen and say they are doing normalisation or something and it's like select a primary key and they click on something and it says no you are wrong try it again. You know, going and getting a word document and getting links to something, I just don't think that that is really online learning and I think that that is kind of misleading to be honest, if I signed up for the course I think I would feel a bit misled, I know it's not intentional but I am not sure about the online learning part of it. I think we make things available online."* C2 - FG Staff - 20704

This was one of the comments that prompted the team to attempt to integrate the SkillSoft learning objects. However, it become apparent that the version of the software that was available for testing did not meet the requirements of the individual modules.

7.3.3.6 Communication

Communication (3 6), was one of the issues which caused confusion on the programme. Due to the variety of communication facilities, it was difficult for some students to actually get the necessary information when they needed it. The following student comments illustrate this example drawing on the problem of car parking arrangements and other administrative issues, which made this student feel as if they were not valued:

> *"Probably more things can be done to make us feel more valued. There have been all sorts of things that have gone wrong, there is no big deal with any one of them, the car park is probably the biggest thing that has gone wrong… but if he issued a memo for this semester and got it out at the start of the semester well then at least it would have*

been our own fault. …. And then again I have an invitation to this Teaching and Learning committee, I am invited but nobody bothered to send me an agenda, because I am only a student. And I know that it is as bad for the full time students, because I am the only student who was present at the last teaching and learning committee." C4 - Student C- 170505

The student-student communication (3 6 4) in particular when using discussion boards has created some misunderstandings. This was particularly evident when the first assessed discussion board collaborations were set-up. This prompted the need for discussion forum guidelines and general awareness-raising in respect of the limitation of online communication.

Communication between staff was also highlighted as problematic. Although there were formal face-to-face meetings held to share observations and experiences, not all staff attended these and therefore some were more able to engage with the learning process than others. The written minutes and actions were also not adhered to by all participants. This was discussed in more detail in the staff development section.

7.3.3.7 Local blended learning theory

The local blended learning theory node (3 4) was used to collect views from all participants during the process of this research. The interpretations of blended learning varied amongst the staff and students. However, there was one common issue that all referred to when discussing blended learning and that was the use of Blackboard:

*"The main thing that I am going to be doing differently for this course and because of blended learning is provide a lot of additional support, in terms of notes, slides and probably case studies on Blackboard."*C2 - Lecturer J – 310804

Another element that was frequently mentioned was self-study, as can be seen in this response from a lecturer who was asked what blended learning was for them:

"Yes well that's a hyped phrase isn't it? I guess I take that to mean that it involves a significant amount of self-study and doing it on your own and just not coming into lectures etc. but it's very difficult to devise a course on that basis really, that's the kind of distance learning course again." C4 - Lecturer H – 270505

7.3.3.8 Culture of learning in higher education

The last node of the pedagogy theme is related to the culture of higher education (3 8). This was highlighted by the diversity of students and the difficulties they faced when coming into higher education. The culture shock is explained as follows by one of the students:

> *"I think it is a culture shock for most of them. They have come from college and they are used to things, like you have been told that you will do this and you do that. But then when they come here and they are told to go away and get on with it. That is a problem. I mean you do get help. I think that I am lucky in that I have got a team of people that work well together, not on every topic, because it would be good with him or with her on one particular subject what ever, but they haven't had that method of learning explained to them. They don't understand that, they read and they think oh I don't understand that so they don't do anything. I don't understand this well, what's wrong? What you need to do is go away and read up about it."*C4 - Student D-160505

As can be seen there were a number of issues that related to pedagogy on the studied programme. The next section of this Chapter will examine the learning aspects of blended learning.

7.4 Learning: The Fine Structure of the Blended Learning Concept

The previous section outlined the issues emerging from the context of learning. The data examined so far suggests that learning is influenced by the context and dependent on the learner, the pedagogical beliefs of the teacher and overall programme facilities available. This section will explore the three themes of learning. The differentiation is made between face-to-face facilitated learning, e-facilitated learning and self-study.

7.4.1 Face-to-face facilitated learning

One of the main actions in implementing blended learning on the studied programme was to reduce the time spent in the face-to-face sessions to four hours per week. Compared to the part-time degree which was operated in the past in this institution for one day a week, the new 3.5 - 4 hours attendance requirement was half of what had been expected in the past. During the four cycles of action research the face-to-face facilitated learning increasingly gained

more attention. Part-time students had to justify their attendance of the face-to-face sessions, because some of them had long travelling distances and once a week were inconvenienced by not being able to see their family or friends in the evening. The figure below outlines the main nodes that were coded from the data (see Figure 37: Face-to-face facilitated learning).

Face-to-face facilitated learning

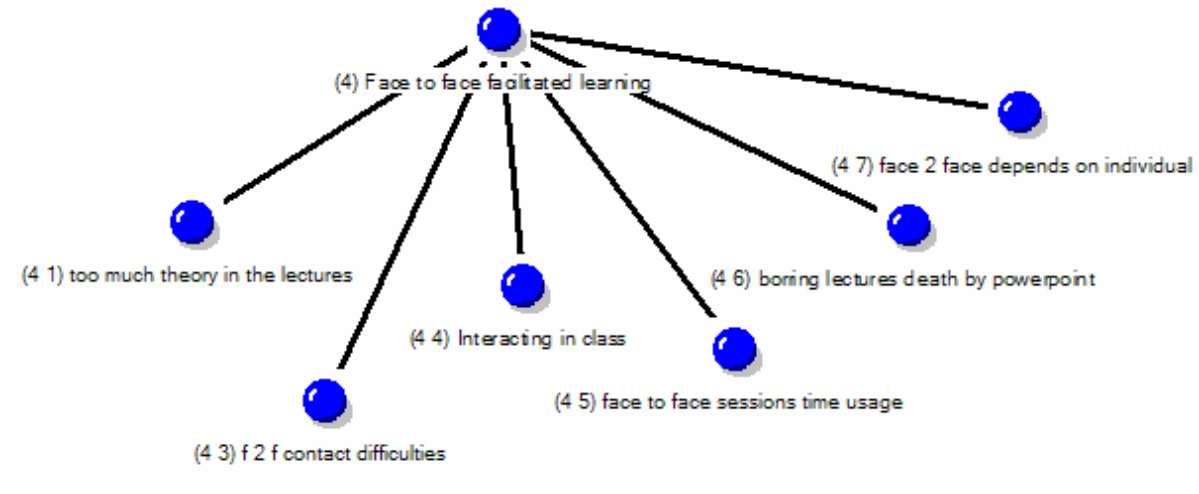

Figure 37: Face-to-face facilitated learning

The researcher's belief at the outset of this study was that the main issues would be associated with the electronic implementation of the programme. This was justified by the belief that lecturers have traditionally experienced face-to-face interactions in their day-to-day teaching and would therefore have no difficulties in this respect. A similar assumption was adopted by the participants in the initial cycles of action research, who delivered their usual sessions to the part-time students. However, the feedback from students was that those lecturers who used the face-to-face time for lecturing (node 4 6) were boring. 'Death by PowerPoint' was an expression used by some of the students to describe their feelings of not being able to interact with the lecturer. We will now explore the six nodes associated with face-to-face facilitated learning.

7.4.1.1 Too much theory in the lecture

The node (4 1) coded responses from staff and students in relation to too much theory content in the lectures. The lecturers were usually teaching the same modules for part-time and full time students. This meant that the same material and content were used for the face-to-face

sessions. Some modules were taught on the full time programme on a 10 credit basis and over two semesters, the same modules were taught on the part-time programme within one semester and with 20 credits. This resulted in some lectures covering double the amount of content as would have been the case on the full time programme. This issue was identified early in the first cycle of action research by both staff and students:

> *"It is agreed that in the second semester students will have more practical exercises/work in class and more reading and researching at home/online."* C1 - Meeting - 150104

However, in practice staff had to resort to lecturing in their sessions since students did not engage with the reading at home and online as expected. One lecturer observed that the use of face-to-face time issue is not specific to part-time students:

> *"It is true of all tertiary education. Also you see there is another problem which is we know that just talking or lecturing is not the most effective use of the face-to-face time, we know that. It is much more effective for the students to read around that topic and when we have the face-to-face time, for students to discuss around that topic, in other words we have some dialogue. But if the students don't read the topic between the classes you have a problem there."* C3 - Lecturer C – 150205

Although most staff were aware of the theory, that lecturing in the face-to-face sessions was not the most effective way of student learning, they felt that by lecturing these theories at least some students had the chance to learn from listening. This issue is closely related to the pedagogy issues discussed before and highlights the practical limitations of conversational learning. Another issue observed was that a number of students were interested in more practical aspects of learning rather than being exposed to theory:

> *"The other interesting thing was that a lot of them were saying that they wanted more practical work and they expected the course would be more practically orientated with less theory which again is a case of managing expectations and making sure that we tell them to expect what we give them, is the way round I'd put it."* C4 - Lecturer H - 270505

This can again be due to the nature of mature students wanting to gain more practical skills rather than being able to understand the theory. The issue of student expectations management is again down to the individual lecturer, there is a need for clarity of what the module actually entails and how this could be used to advertise it to potential students.

7.4.1.2 Difficulties with face-to-face contact

The difficulties experienced in face-to-face sessions were mirrored when students required help with their practical assignments from the teaching staff in the face-to-face session. Due to the part-time nature of the programme not many students were able to make use of the GTA support scheme outside of the evening sessions; this meant that the time in the evenings was crucial in resolving any technical problems that they faced. This is where the limitations of electronically facilitated learning using a discussion board become apparent, as observed by one of the support staff:

> *"I don't think that you can teach practical assignment much through a discussion board."* C4 - Support A - 190505

7.4.1.3 Interacting in class

The issue of student engagement (4 4) was predominantly related to students' problems with assessment. For the majority of students, only by engaging in summative assessment were they able to focus on the problem and there was a feeling amongst staff that assessments produced queries and problems, which students wanted to discuss and which promoted learning. Both staff and students realised the importance of the face-to-face sessions and the related social aspect of learning. It was generally agreed that face-to-face sessions were important since they facilitated interaction between staff and students and the students themselves. However, in practical assignments in particular help was provided on a one to one basis and this was criticised by some students by stating that more group instructions would have been more efficient:

> *"Yes, it is a lot better if you have the attention of more people rather than individuals, because you are wasting time, that way everybody gets the same information at the same time."* C3 - FG Students – 100105

The practical session required students to engage with software and produce some artefacts. However, the one to one help was not effective and some students wanted to see some common problems being resolved and communicated to the group. This highlights the need for the management of practical work. Although the support provided is specific, if there were similar problems faced by the majority of students, it was worth speaking to the group. The other extreme of all lectures was not welcomed by the students:

> *"I don't want to learn by listening to a lecturer for three hours."* C4 - Student G – 160505

This suggests that a balance between 'individual support' and 'group lectures' is the preferred solution for the limited face-to-face session time. This relies on the facilitator to be observant of the situation and responsive to it and also when planning, combining the two delivery methods. For example, a demonstration of a practical solution on a large screen and then students asked to re-create that solution on their own afterwards, would be a better way of acquiring practical knowledge.

7.4.1.4 Utilisation of the face-to-face session time

As discussed in the third cycle of action research, it was becoming evident that there were different views on how the time in the face-to-face sessions should be used. Some staff were criticised for not doing enough lectures, others were lecturing too much. Some students also preferred smaller sized groups to make the most use of the face-to-face session times:

> *"I prefer hands on, face-to-face and smaller groups to get the individual attention sometimes needed. However, I fully understand this is not always possible."* C4 - Student H- 50806

One important observation here is that there is a need for continuous dialogue between staff and students to enable staff to adjust their delivery style to suit students' needs. Despite their constructive criticism some students also appreciated that the ideal situation is difficult to achieve. There was a comment from a member of staff who thought that the ideal situation would be utopian and not practical:

> *"I think the students themselves said, ... they wanted to use the evening sessions more in that they get the notes beforehand, this is what I think when I am talking about it, they get the notes online beforehand and then they come in and they are ready. But I mean, well that is a bit utopian, they are not going to do that"* C2 - FG Staff – 20704

7.4.1.5 Boring lectures

Yet again the individual style of lecturers was highlighted by students:

"…This one particularly, I felt that the teacher, I wasn't the only one who said that, most of them said that well I didn't have to come here, yeah. Basically the information was "zero", at some point he was not right, yet he insisted on it, at some point. Yet what it does, it is really the little things, twice it happened. He took slides from somebody else and he referenced it there, but it wasn't his slides, somebody else did it. There was a sentence and somebody asked what it means and he explained it somehow, from my experience that means something else and thinking about it that other person was right, but he insisted on his explanation. He was a very laid back, very nice person, but I just never felt that I got much from the lectures." C4 - Student A – 170505

In this case a student felt disappointed with lectures because the information provided was perceived as being of little use of precious time. The use of PowerPoint slides was also criticised:

"Let's get rid of lectures and PowerPoint slides" C4 - Student G – 160505

Whilst there were some students who saw the benefit in handouts and notes they did not see the benefit in lectures being driven by PowerPoint presentations which were becoming boring and no extra benefit was perceived from attending the actual lecture.

7.4.1.6 Face-to-face depends on individual

The difference between the lecturers and their way of using the face-to-face time was also noted by the students, they felt that some lecturers were overrunning their sessions and others were too quick:

"[Name1]'s lectures seemed to be very, very short. On the other hand [Name2]'s lectures were overrunning. So it is horses for courses." C4 - Student C- 170505

However, there was also an observation that the times when there was no supervision and students were left to work on their own, was not felt to be of much benefit to them:

"Well, whatever, lecturing, discussions, or feedback, whatever it is, being left to your own devices in the lab or wherever, I am sure it is good on a full time course for part of the time. But on the part-time course it is an absolute waste of time, it is a waste of precious time, that is the trouble it is kind of a waste of 50% of the time. Now if you took a full time course, would you say that it is right to have 50% of lecture time without the lecturer present?" C4 - Student E - 160505

This observation suggests that this student did not consider working with peers to be of much learning benefit. However, the feelings of the above student demonstrate a perception that requires clarification at the outset of the activity. For example, the rationale for group work is given to the students so that they can understand how the learning activity is designed.

This leads us to conclude that a variety of activities is a better use of the face-to-face time. Interaction with individuals and lectures to a whole group all have their place and done in combination are welcomed by the students.

7.4.2 E-facilitated learning

At the outset of this research, the issue of E-facilitated learning was perceived as being one of the main challenges facing the implementation of blended e-learning. It was assumed that the higher reliance of the part-time programme on the use of the VLE (5 3) for learning would be associated with difficulties due to the limited staff experience with this tool. This assumption materialised to a certain extent and a number of other aspects were identified as part of this study. The E-facilitated theme incorporates all issues which were associated with electronically enabled learning. This sub-section will focus on the seven main branches of this node as identified in the figure below (see Figure 38: E-facilitated learning theme).

E-facilitated learning theme

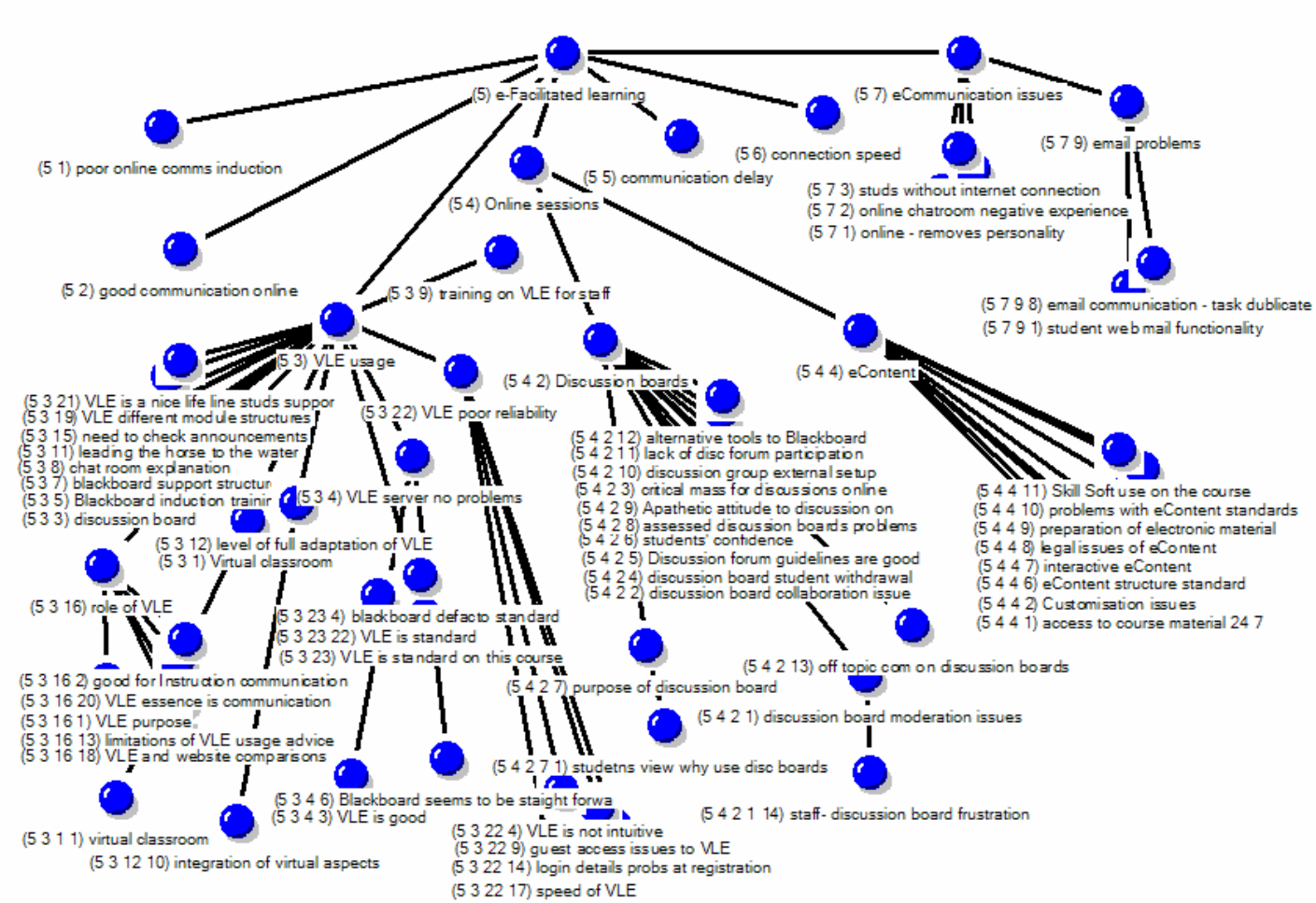

Figure 38: E-facilitated learning theme

7.4.2.1 Poor induction to online communications

The first branch of the e-facilitated learning theme is related to issues associated with student induction in the use of the technology. This is influenced by the poor staff induction on the use of the system. The actual induction issue was discussed in the description of the action research cycles (previous chapters). The following quote also highlights the lack of induction for the direct entry students, who went straight into the second semester:

> *"I think that it certainly would be helpful if were told how to use it. We have probably missed out on the first year induction. We mean the direct entry, we have had it with the [current] first years but that was just sort of saying Hi welcome that sort of thing… but it was not 'this is what you have to do'."* C3 - FG Students – 100105

Although the student recalls the online discussion board introduction activity, where they were asked to participate in an online discussion board whilst being in a computer lab, the impression was that this was not satisfactory as a way to learn other main features of Blackboard. However, this already marks an improvement compared to the first cohort of the first semester where students did not know where to find the discussion board until they were several weeks into study.

7.4.2.2 Good online communication

The collaboration tools as facilitated by Blackboard were praised by several students as can be seen in the quote below:

> *"The collaboration tool of Blackboard is very powerful and was used by several groups"* C1 - FG Students – 120104

In addition to the ease of use, the availability of Blackboard was praised by some who had experienced similar systems in other institutions:

> *"It is quite easy though. I find it quite easy to read the messages; I find it quite easy to download the messages I am quite amazed, because normally if it is anything to do with University it is just never ever easy. Like you said it is always down. I used to work for [A local University name], and every time I wanted anything it was always down and this to me is just the other way round, I never found it down. I am surprised that you said this because I never found it down."* C3 - FG Students – 100105

Being able to go online and access information via discussion boards or simply by downloading the handouts was generally perceived as positive by staff and students.

7.4.2.3 Utilisation of the Virtual Learning Environment

Generally, when referring to the positive impacts of the Virtual Learning Environment comments were related to the management of communication:

> *"I think it is excellent for data transmission. I think it is excellent for instruction for example for putting lecture notes, reading materials, links, past exam papers, documents of all sorts, graphical documents, pictures, putting them on the web where the students can access them any time any place, I think it is superb for that. The communication part of this I am not convinced of but to be honest with you, I haven't used it for an awful lot. I have toyed with virtual classroom in the past and it hasn't been successful."* C2 - Lecturer C – 100604

On a number of occasions it was compared to a conventional website, but when it came to access control, hierarchy and ease of use, the Virtual Learning Environment provided infrastructure of a good standard. Although not without its difficulties, the VLE has proved overall to be a reliable tool. Problems such as technical failures and lack of support over the weekends confirmed that there are still a number of issues which need addressing. When students were asked whether they were satisfied with the use of the VLE there were some negative replies:

> *"No, no no no. There might be only one person, I mean the only thing that the teachers do is that they put the materials on there. There aren't any extra links to go to study, that is where most of the people go and some of them don't do that even. I think that the teachers don't do that as much as they could. I think it is a great thing but it is not used, I mean the slides and everything they are there, but yeah…"* C4 - Student A – 170505

This student was not convinced that the material provided was of much benefit for study.

7.4.2.4 Online sessions

In the first action research cycle in particular, there were a number of incidents that involved the use of online sessions (5 4). These resulted in actions such as the production of guidelines for discussion board use (5 4 2) and the reduction of assessed online discussions (5 4 2 8). The

number of students contributing to the discussion boards was also observed to differ from one cohort to the other:

> *"I know that in the first year [cohort 1] we had one or two slightly overzealous posters and they kept the whole thing going because you know they were just posting four times a day or so and maybe that would shake the others into replying. We don't really have that in this group [cohort 2] to be honest with you."* C3 - Support C – 280205

On the first cohort there were a couple of active students who were posting messages almost every day on the discussion boards, whereas in the second cohort, students were different and the dynamic in the online environment changed. Only the assessed discussion boards were popular but not the subsequent sessions:

> *"Yeah, that first assignment that we did, was an online discussion, that was good… That was brilliant that was. It was just like everyone interacting, it was really good, but then it sort of slowly died."* C4 - FG students - 100505

In addition to the learning via the discussion boards there was the step of introducing learning via learning objects as supplied by SkillSoft (5 4 4). There were mixed views about these elements particularly in relation to the technical difficulties. The views on learning were mixed. Some students felt that it was not as much fun as doing a group assignment, therefore the perceived learning benefits were limited:

> *"As a communication tool, with all the students to communicate, it is fine like that, it is very effective for that, but not as a learning tool"* C4 - FG Students – 90505

Yet other students were happy with their online learning experiences. A number of alternative technologies were considered to replace one of the other functionalities offered by the Blackboard tools (5 4 2 10). These included the considerations of PHP BB open source discussion forums to replace the standard Blackboard forum that did not provide a digest or a subscription to threads opportunity. This was discounted after a short pilot, which did not prove popular with students and lacked back up and dedicated technical support. This strengthened Blackboard as the de facto standard (5 3 23 4). Additionally, technologies used for assessment using multiple choice questions, such as Questionmark Perception, were considered but the standard Blackboard assessment option was chosen due to its simplicity and again the support offered by Blackboard. One technology utilised outside Blackboard was

SkillSoft (5 4 4 11) and this proved yet again to be a major technological challenge for the students. There were a number of access issues outside the control of the students or staff supporting this environment.

7.4.2.5 Communication delay

The predominant communication tool used was the asynchronous discussion boards. The drawback with asynchronous communication was that students were not sure if they should reply to messages that were a couple of days old:

> *"… you know that we are all part-time and we can't access the discussion boards at the same time so you are finding yourself answering questions that are two or three days out of date. For example if you are looking at things and you see [Name] asking a question and you think oh I know what you should do but then you think oh it is three days ago, they probably know the answer."* C3 - FG Students – 100105

Although students were encouraged to reply to old messages, it was difficult for some of them to get quick answers. The informal agreement was that the GTAs would check the online discussion boards every other day.

7.4.2.6 Connection speed

Although a number of students had home Internet access, some of them found that using a dial-up connection to connect to the Blackboard VLE was slow, so that they had to upgrade:

> *"… sometimes it took a long time to load you know where there are a lot of messages so, I have upped it since…"* C3 – FG Students – 100105

There were no major problems with accessing the VLE once the students were made aware of the details. This can be due to the nature of the course being aimed at IT students and to the fact that these students will have access to the Internet from work as well as from home.

7.4.2.7 e-Communication issues

Apart from communication misunderstandings, which were discussed in the earlier chapters drawing on the individual cycles of this research, there were also some technical issues associated with file attachments:

> *"…Because some of the things, when we were doing the database thing you can't actually email it, because it gets stripped out because it is… what is it .mdb file."* C3 - FG Students – 100105

In this case the email system was set-up in such a way that any attachments that contained database extensions were removed from the email. Work-around of renaming attachment files was suggested to overcome this. This example illustrates one of many technical issues which the students brought up in the course of their study and highlights the need for technical support staff to help with the electronic learning experience.

The next section concentrates on the sixth theme which emerged from the overall data analysis. This theme is self-study and highlights the importance of individual student study when taking part in a blended learning programme.

7.4.3 Self-study

Previous learning related sub-sections examined face-to-face and e-facilitated learning. As with the use of the face-to-face sessions, self-study was not given particular attention at the outset of this research. Because it was perceived as being similar to the learning concept in full time education, it was felt that there was no reason to see it as a separate issue. However, practice showed that this was a particularly difficult aspect when it came to blended learning and students' lack of ability or discipline to balance self-study with their other activities such as work and family life.

There was a clear message from some students who said that the reason they had chosen this programme was that they wanted to have more structure to their learning and the opportunity to interact with others. This is a key benefit of blended learning programmes, however, the responsibility of studying still rests with the individual students who have to develop their own learning routine. As can be seen from the figure below (see Figure 39: Self-study theme) it is one of the least developed themes of the emergent blended e-learning concept.

Self-study theme

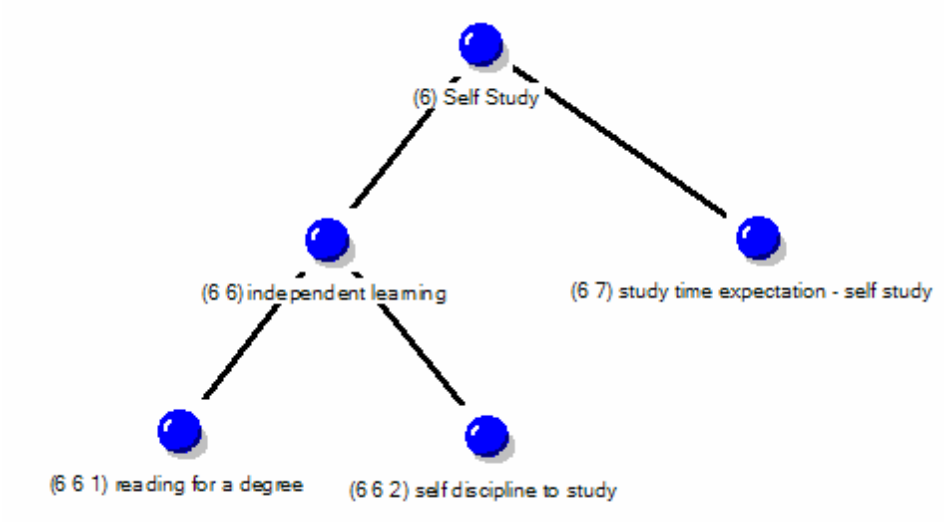

Figure 39: Self-study theme

The two branches (6 6) and (6 7) differ in the way that the first is concerned with the general issue of independent learning and the latter emphasises the issue of time to be allocated for it.

7.4.3.1 Independent learning

Staff felt strongly about the need for independent reading and the term "reading for a degree" (6 6 1) was used by one of them to emphasise the need of students to engage with relevant literature:

> *"I think what is fundamental to blended learning is doing that Self Directed Study. Blended learning is a blend of distance and face-to-face learning and they are not doing that, you know. OK, you have got the issues of work etc, I don't know ... but I really wonder if people understand what doing study means. I constantly turn around to people and say: have you ever heard from people saying what reading for a degree is? They say, "oh yes I have heard the term reading for a degree", so I say "now just say it again, "you are supposed to be READING for a degree". You are supposed to be reading, and you know students just don't do it any more, how many people don't read."* C4 - Lecturer B – 200505

The reading element requires students to take part in an activity which has to be done on their own. This issue highlights that an individual has to be disciplined to study (6 6 2). The lack of discipline was highlighted by one of the students as a reason for withdrawing from the programme:

> *"Unfortunately I am going to withdraw from the ISI course at Salford. I have been having a lot of problems, a few with the course but mainly with work. I also feel that I don't have the self discipline to properly knuckle down to the course."* C2 - Leaves 200304

This lack of discipline also had an impact on the completion of dissertations on the part-time degree. According to one member of staff who experienced this programme in the past there was a high number of students leaving the programme with ordinary degrees just because they were unable to complete their dissertation and so settled for an ordinary degree. This non-completion happens despite their high marks in previous modules (C4 - Lecturer B – 200505).

7.4.3.2 Expectation of study time

One of the benefits of this part-time programme was that students had to attend only four hours per week for the face-to-face sessions, the rest of the time was designed to be divided between online and individual work. This flexibility means that approximately 24 hours (2 hours per 12 weeks) were allocated in the face-to-face sessions and the rest, 176 hours (17.5 hours per 12 weeks) for each 20 credit module were allocated to self-study:

> *"The other thing that I was going to say was that they were not sure how much work they had to put into it when they are at home. Because it is not just four hours one evening a week and then a bit here and there, without saying how many hours they would have to commit, because there might be problems, we can still say that there is a significant amount of hours that you have to commit."* C2 - FG Staff – 20704

As raised in the above quote, the time students spend on self-study was causing concern amongst staff, since it was felt that students were not committing the necessary amount of time to study. It emerges that self-study is a very important part of blended learning, despite the fact that face-to-face and e-facilitated learning are in place, these cannot fulfil the entire study needs which rely on individual students to develop their own learning routines.

The pedagogic beliefs node is one of the six nodes comprising the Fine Structure of the Blended Learning Concept. The following section builds on pedagogic beliefs and develops them into the three inter-related key issues of blended learning pedagogy.

7.5 The Key Issues of Blended Learning Pedagogy

This section highlights the three key issues or themes that emerged as important for blended learning pedagogy. These Key Issues of Blended Learning Pedagogy are: communication, social interaction and assessment.

When designing this programme to suit part-time student needs (Procter 2003:1), the introduction of blended learning was perceived as a viable option. The reduced ability of students to attend whole day classes was addressed by increasing electronically-facilitated learning and reducing the face-to-face contact time. In practice, this change was perceived by some staff as merely an introduction of Blackboard to their usual teaching:

> *"...blended learning is just the mix of traditional learning plus the use of Blackboard..."* C2 - Lecturer J – 310804

The above quote highlights the simplistic view of what the introduction of blended learning meant in a pedagogical sense to some. Initially, not much attention was paid to pedagogy:

> *"Well it just doesn't happen in terms of full time education. The word pedagogy is a very new one really. ... It is certainly something that hasn't been considered as important i.e. to consider how students learn."* C2 - Lecturer C – 100604

In the first two cycles of action research – during the first academic year - most of the time was spent dealing with teething problems related to technology implementation (see Chapter 5). However, during the action research, the participating staff had the opportunity to reflect on their practice and to share their views on their perceptions of students' learning and to make relevant pedagogic assumptions. Consequently, by the end of the first academic year, pedagogical issues were starting to emerge. This provided an opportunity to introduce some theoretical ideas into discussions. During the third action research cycle, the Conversational Framework (Laurillard 1993) was given particular attention, since it appeared to be of particular relevance to blended learning. The following three sub-sections will outline the

main issues encountered during the action research cycles and these will then be related to the Conversational Framework. The three main issues identified in this research are: communication; social interaction; and assessment. These are the same issues that appear in the literature addressing distance education (Galusha 1997).

7.5.1 Communication

Early in this research it was observed that communication played a major part in facilitating the learning process (Heinze and Procter 2004). The introduction of technology, to facilitate electronic communication and reduce face-to-face dialogue between staff and students and between students themselves, raised a number of misunderstandings. Many of these misunderstandings affected students' learning in a negative way. For example, the use of online discussion boards seriously knocked the confidence of some students:

> *"People felt out of their depth by online discussion forums, which knocked confidence…"* C1 - FG Students - 120104

There were a number of electronic communication related issues that arose. These included: student fear of posting messages electronically – this had to do with a fear of exposing their weaknesses; student complaints about the alleged lack of control of discussion boards – this had to do with student unfamiliarity of online discussions; and the unreliability of technology – mainly Blackboard failure. The following extract highlights problems of connecting to the Internet and the fears that often resulted in the minds of students:

> *"Due to recent events in my personal life and the frustration of not being able to connect to the Internet at an earlier date, I have decided not to return to the course this year. I have already achieved… but seeing what my fellow students were contributing online with all their experience in IT where mine is mainly educationally based, quite frankly, scared me and made me realise that I could be letting my 'team' down…"* C2 - Leaves – 200304

One major problem in communication had its origin in the way the learning programme was structured. Two modules per semester were timetabled and the two lecturers involved met the students on alternate weeks. Many students objected to this. They wanted weekly face-to-face sessions with both lecturers. This was perceived by them as being more advantageous, since they allowed a richer communication between staff and students all of the time. It was pointed out to them by the staff, (as it had been at the induction session), that between the face-to-face

sessions delivered by a given lecturer there would be electronic communication – emails, discussion boards, virtual classrooms etc. The students had conflicting views on this matter. Some recognised the value of the two mutually supporting communication channels and utilised them to the best of their ability. However, others felt disadvantaged by this process. They were not comfortable with the idea of electronic communication, even though it was vital to successful learning. This supports the thinking that communication plays a major part in facilitating student learning and blended learning in particular (Heinze and Procter 2006). Therefore, any pedagogical theory for a blended learning programme would need to take into consideration the special communication issues present in such programmes.

7.5.2 Social interaction

Social interaction amongst students generally, be they discussions over a cup of coffee or on online discussion boards, allows them to 'bond' and build networks of relationships for study-related interaction. Full-time students have more opportunity to interact socially on a daily basis by virtue of the amount of time they spend on campus. This is not the case with part-time students. Initially on this programme, the lack of face-to-face contact time did not seem to have produced a negative impact on social interaction. However, with the second cohort of students the reduction of face-to-face contact did appear to be a major problem. Also, it did not seem to be compensated for by the online social interaction opportunities that had been provided. This was of great concern to both students and staff. The importance of social interaction and the consequent peer-learning opportunities were understood by all. One of the students stated:

> *"I think that community thing that makes you belong to a group that makes a difference to the way you learn you know."* C4 - FG students 100505

An analysis of the differences between the first and the second cohorts was undertaken. The online discussion boards facilitating student-student communication were particularly active in the first cohort of students. This was not the case with the second cohort. It was believed that there were a number of reasons for this. The second cohort was not as large as the first, it had undertaken fewer group assignments and, unlike the first cohort, had not organised any social events. Such factors could explain why the second cohort students were not as frequent in posting their questions in online discussion boards and why when questions were posted they did not attract as many replies. Some of these students explained their 'fear' of posting

their assignment-related problems as a result of not knowing each other that well. On the other hand, there were expressions of relief by some students who felt that they were not on their own when they informally discussed the progress on their assignments face-to-face:

> *"I don't know about other people, but I feel like when I haven't done an assignment and then I find out that I am not the only one I feel like yeah… (gesture of a fist hitting in the air)"* C3 - FG Students - 71204

Lecturers planned a number of interventions that would improve social interaction and hence learning for the second cohort of students. However, the important thing to note is that social interaction between students is an important mechanism in cultivating learning. Therefore, any pedagogic theory in blended learning must address the issue of social interaction.

7.5.3 Assessment

The third main issue that emerged from the data in relation to pedagogy was assessment. Assessment has essentially three purposes: diagnostic – to ascertain how prepared students are for a programme of study; formative – to inform both students and lecturing staff about the learning progress of students; summative – to ascertain the individual's level of achievement against assessment criteria and ultimately to determine the student's final grade (QAA 2006). In the current research, some diagnostic assessment of students did take place during the Accreditation of Prior Learning before entry onto the programme. Formative evaluation took place throughout the four cycles of action research. Summative assessment – the assessment that counts towards the final grade - took place during modules and at their end. In a sense therefore, the summative assessment that takes place during a module is essentially formative. The assessment issue that arose was concerned with both formative and summative evaluation.

It was found that learning activities that were set as formative exercises were not taken nearly as seriously as summative activities. The issue of summative assessment-driven study was recognised by all. If it did not count towards a module mark, then it was just not taken seriously:

> *"I found that when I asked them to do or read something and then expected them to come in and be ready to discuss it, they haven't read it; they just haven't done it."* C2 - FG Staff – 20704

In any programme of study this is a serious matter; in a part-time blended learning programme that relied heavily on assignments, formative work was vital. It was also a practice that was at odds with students feeling that there was a need for quick feedback on assignments:

> *"I think we could do with quicker feedback on the programming. We do have quite similar assignments and if you make a mistake in the first assignment, you don't have a chance to learn from it if you don't get the feedback until the last assignment was handed in."* C3 - FG Students – 71204

Assessment is seen by some staff as having a dual role as a 'carrot and as a stick'. A carrot, because it motivates students to do well as outlined above; a stick, because it threatens students with failure. This aspect of assessment i.e. assessment as a stick, was generally not commented upon by staff but it was found that it could actually be de-motivating. Firstly, because of the pressure of work:

> *"Yes, it was overload, because we were stressed out a bit too much. If we had to hand one [assignment] in every six weeks fine, but if we had to hand one in every other week it is too much."* C3 - FG Students - 100105

Secondly, because of the loss of confidence such pressure can create. Overload is overload whether the assignments are formative or summative. Stress through overload can lead to missed assignments which in turn can lead to a loss of confidence. All of this can have serious consequences for students on a part-time blended learning programme, which incorporates many assignments. It is important to keep in-mind that the assignments are present in the programme as a vital component of the pedagogy.

A table has been prepared to illustrate the issues of communication, social interaction and assessment, which have been discussed above. Table 23: Pedagogy themes from both stages of data analysis are given below. The table has four columns: The first contains the three themes of communication, social interaction and assessment; the second highlights the emergent issues from the action research as discussed in the work description chapters; the third grounds the issues in the nodes; the final column highlights the implications for blended learning pedagogy.

The following section introduces the Bermuda Triangle of Blended Learning. This draws on the above discussion of the Fine Structure of the Blended Learning Concept.

Pedagogy themes from both stages of data analysis			
Themes	**Action research: emergent issues**	**Nodes**	**Implications**
Communication	Staff – student communication (C1) Session timings (C1) Face-to-face session usage (C2)	(3 6) Communication (2 5) Course Layout (4) Face-to-face facilitated learning (1 11 13) Need for tighter or stricter management	Need for awareness of communication limitations: Use of weekly face-to-face sessions for repetition and clarification of any issues arising online. Repetition of same information in multiple ways – online, face-to-face etc.
Social interaction	Disparities of learners knowledge (C2) Face-to-face session usage (C3) Student Community (C4)	(1 4) Disparities of learners knowledge (1 5 8) Need for socialisation of students (1 5 8 1) Communities of Practice (4) Face-to-face facilitated learning	Need for encouraging student-student interaction towards a community – peer support and peer learning will be facilitated
Assessment	Students' confidence (C3) Carrot and stick (C3)	(1 11 3) pt studs want structured learning (3 7) Assessment (feedback) (1 5 2) Getting confidence (1 5 1) Carrot and Stick	Need for structured summative assessments and constructive feedback to build up students' confidence and motivate them to engage with learning activities

Table 23: Pedagogy themes from both stages of data analysis

7.6 The Bermuda Triangle of Blended Learning

The Fine Structure of the Blended Learning Concept identifies three learning-related nodes: face-to-face facilitated learning, e-facilitated leaning and self-study. The author considers these nodes as the most important in blended learning practice, since their combination can result in students being 'lost' in the learning process. Due to the complexity of these issues, the three nodes of learning will also be referred to as the 'Bermuda Triangle of Blended Learning'. In particular, the author believes that the following aspects of learning are the most important within the Bermuda Triangle of Blended Learning: in relation to the **face-to-face facilitated learning** - *induction, student-student interaction, and teacher-student interaction*; in relation to the **e-facilitated learning** - *the use of the Blackboard Virtual Learning Environment, discussion board moderation, SkillSoft learning objects and e-facilitated assessment*; and finally in relation to **self-study** – *is the need for assessment and the students ability to learn on their own*. Since the pragmatic issues of blended learning are inter-related to the blended learning pedagogy, it is clear that the three key issues of pedagogy -

communication, assessment and social interaction – can be found in the pragmatic implications.

No further discussion of these three will be made at this stage, since pragmatic implications were already extensively discussed in relation to the individual action research cycles (Chapter 5 and 6) and the Fine Structure of the Blended Learning Concept (current Chapter 7). However, we will return to this in the discussion Chapter.

The Bermuda Triangle of Blended Learning provides key areas of attention when it comes to a blended learning programme design, delivery and improvement. Obviously, there appears to be a need for some staff development. The current work highlighted the issue of staff development in three out of the four cycles of the action research. This was discussed in sub-sections: 5.2.2.1; 5.3.2.1; 6.3.2.4 with particular emphasis being placed on Staff training on the Virtual Learning Environment and Staff Autonomy. A summary of action research cycles appears below (see Table 24: Summary of action research cycles).

Summary of action research cycles:				
	Cycle 1	***Cycle 2***	***Cycle 3***	***Cycle 4***
Emerging issues	***Staff training on VLE*** Discussion board moderation Impact of VLE Staff – student communication GTA Support Programme layout: Session timings	***Staff training on VLE*** Discussion board moderation Student induction Disparities of learners knowledge Pedagogy Face-to-face session usage	Assessment: Carrot and stick Learning tools infrastructure VLE – "nice lifeline" Students' confidence Learning location Face-to-face session usage	Learning objects – SkillSoft Learning tool infrastructure - Car parking Student Community ***Staff autonomy*** Programme benefits – retention

Table 24: Summary of action research cycles

The issues of the Bermuda Triangle of Blended Learning and staff development will be discussed further in the discussion chapter. The following section provides a summary of this Chapter.

7.7 Summary

This Chapter has described the six nodes of the Fine Structure of the Blended Learning Concept emerging from the second stage of data analysis, drawing on all four action research cycles. The discussion was structured around the individual nodes that are 'learning' (face-to-face facilitated, e-facilitated and self-study) and 'learning context' (learner [or part-time student], pedagogic beliefs and overall programme issues) related. For each of these six nodes this Chapter provided an overview which draws on the node branches and sample quotations which were used within these codes.

The first node focused on the profile of part-time students (the learner) and their needs when it comes to education. Their characteristics such as limited time to study indicated that part-time students prefer a very structured approach on individual modules. The issue of confidence, the building of which requires frequent feedback and encouragement and guides students through the learning process, has also emerged from the data.

When it comes to the actual programme, the infrastructure provided must take into consideration the part-time students' needs. Attendance one evening per week means that students don't want to waste time looking for a car park and compromising their security when walking back to their cars in the evening. The majority of the students felt that the layout of the programme was best when two modules were taught per evening.

Pedagogically, the three components of assessment, communication and social interaction of the student group were highlighted as important for part-time students. The Conversational Framework provided a useful starting point but a number of limitations were highlighted, such as the lack of an assessment link to motivate students to interact and a lack of student-student activities to promote the social aspect of the programme.

Learning in the face-to-face sessions was highlighted as an important part of interaction on the programme. The three and a half to four hours time available for face-to-face contact were limiting in terms of what could be done in that time, but it appeared that discussions and group work were perceived as advantageous for learning. On the other hand, non- stop lectures and unsupervised sessions were perceived as being a very poor use of time. Due to

the difference of opinions about learning, it emerges that a variety of activities such as lecture, tutorial and practical is a better way of using the face-to-face time depending on the subject.

The e-facilitated learning was perceived as minimal on the programme. Learning occurred whilst students were engaged in an online activity. Although there was use of assessed online discussions and SkillSoft learning object computer based training, neither of these two were successful. The former was deemed as unworkable due to the disparities of learners' knowledge and the latter due to the limited content level and technical access issues. The online environment was particularly useful as a communication tool for students to get the lecture notes and handouts and to download and submit their assignments (assignment management). The discussion boards were particularly useful in keeping students in touch with each other during the week. The 'frequently asked questions' and social student interaction were found to be two of the more successful and popular uses of discussion boards.

The final node of the Fine Structure of the Blended Learning Concept was self-study; this highlighted the requirement for students to engage with learning on their own. Although the programme was designed to be blended learning, implying that learning would be a combination of online and face-to-face, this leaves out one important category, that of individual study. In particular, in higher education there is a need to develop individuals' opinions and arguments, which requires research and personal experience in order to formulate conclusions. This means that there must be a considerable commitment to a study routine outside of the face-to-face sessions.

This Chapter also crystallised three key issues in relation to pedagogy on the blended learning programme. These three inter-related 'Key Issues of Blended Learning Pedagogy' are: communication, social interaction and assessment. Not only are these three key issues inter-related but they also relate to the nodes identified in the Fine Structure of the Blended Learning Concept.

Finally, this Chapter introduced the concept of the Bermuda Triangle of Blended Learning, which draws on the *learning* nodes of the Fine Structure of the Blended Learning Concept. The Bermuda Triangle of Blended Learning identifies three learning nodes relating to the needs of students, but it also highlights the important role of academic staff development.

The next Chapter is discussion. This will draw on both the findings that emerged from the two cycles of data analysis and the literature review. The structure for the discussion Chapter will comprise three sections which will be discussed in the light of the adopted research questions, which focus on the concept, pedagogy and practice of blended learning.

Chapter 8 Discussion

8.1 Introduction

The previous Chapter outlined the six nodes representing the Fine Structure of the Blended Learning Concept, the three inter-related Key Issues of Blended Learning Pedagogy and the three nodes that characterise the Bermuda Triangle of Blended Learning.

This Chapter discusses the findings that emerged from the two data analysis cycles and the relation of these to the literature. Similarities which support the literature are identified, as are differences. This allows the current work to contribute new insights. The figure below (see Figure 40: Conceptual framework: Chapter 8) highlights the issues of concern in this Chapter and reminds us of the inter-relationships of the three themes – pedagogy, blended learning concept and pragmatic issues - studied in this work.

The Chapter structure is dictated by the three research sub-questions concerning concept, practice and pedagogy in relation to blended learning. The first section of this Chapter will discuss the emergent Fine Structure of the Blended Learning Concept. The second section is concerned with the Key Issues of Blended Learning Pedagogy. The third and final section will discuss the impact of this work on blended learning practice drawing on both staff development and the Bermuda Triangle of Blended Learning.

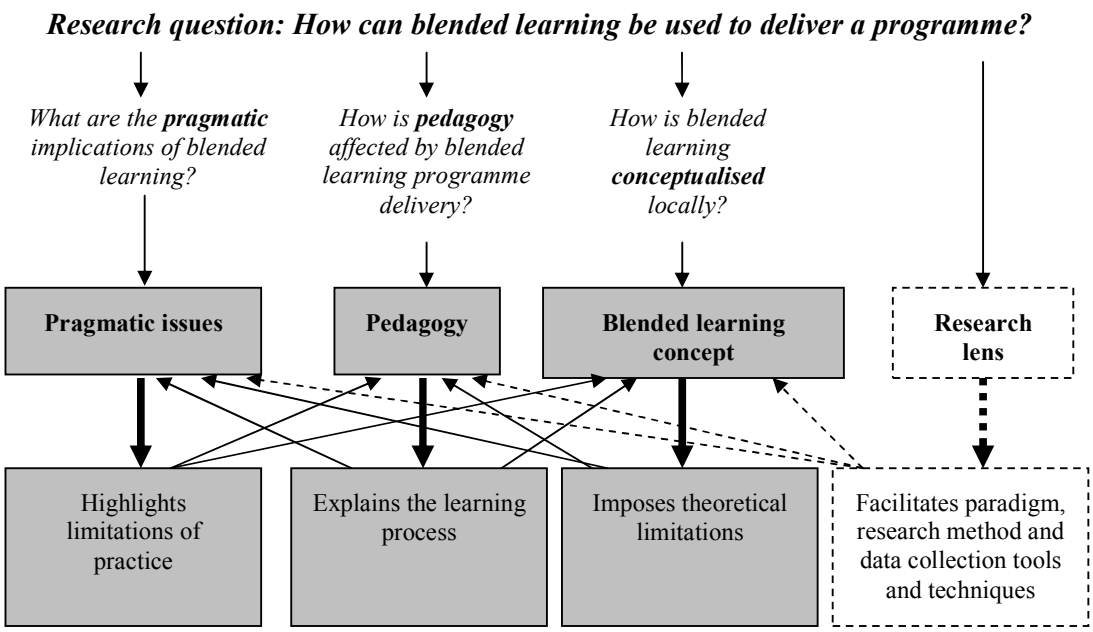

Figure 40: Conceptual framework: Chapter 8

8.2 The Fine Structure of the Blended Learning Concept

The initial blended learning concept was based on a consideration of existing theory and provided informal guidance for the data collection (see Chapter 2). This section follows the argument structure used in the literature review Chapter in relation to blended learning and compares it to findings in this study (Fine Structure of the Blended Learning Concept). A new definition of the blended learning concept is proposed at the end of this section.

8.2.1 The eight dimensions of blended learning

Initially, it was thought that blended learning should be used to refer to a delivery mode which incorporated face-to-face and online learning (see Chapter 2). This argument will be re-examined in light of the findings of this study. The eight dimensions of blends (Sharpe, Benfield et al. 2006) will be used to structure the discussion (see Table 25: Eight dimensions of blended learning – comparison with this study).

The first type of blend is based on educational *delivery* modes. This type of blend can be identified in the current work by the use of the evening sessions for the face-to-face education and the Blackboard-facilitated distance education. The examples of distance education include

the use of assessed discussion boards, multiple choice question tests and SkillSoft learning objects. The second type of blend was the mixture of web-based *technologies*. This study incorporated technologies such as email, Blackboard Virtual Learning Environment and SkillSoft learning objects. Thus it can be considered blended in the technologies dimension. The *chronology* dimension blend was evident in the use of synchronous virtual classrooms and in discussion board facilitated asynchronous interactions. The students in the studied programme were exposed to a variety of assignments, including those that were practice-based, required reflection on practice, and theorisation. This means that the *locus* dimension of blend was achieved on this programme too. There were neither multi disciplinary activities nor professional groupings on this programme, in the period of this study, however in subsequent years the students were exposed to the Work Based Project module which would have satisfied this type of *roles* blend. The *pedagogies* dimension of blend was evident in the programme. Some learning and teaching activities subscribed to associationism, where the work was done by the lecturer explaining the theory and how it affected the practice; others were functionalism based, where problems were presented and learning structured around them. The *focus* dimension of blend was not evident in this study, since the aims of learners and teachers were not explicitly acknowledged. However, the variety of *direction* dimension blend was present. Students often worked under the direct supervision of a lecturer, however, they were also given the opportunity to explore technologies on their own. From the above, it is evident that only two of the eight blended learning dimensions could not be observed in this study; the other six were clearly present (see Table 25: Eight dimensions of blended learning – comparison with this study). In principle, the eight dimensions of blended learning definitions permit a comparison of this study with the work of others and, hence, insights into the concept of blended learning.

In the current study, which is based on the analysis of the four cycles of action research data, it was shown that blended learning could be represented by six nodes of the Fine Structure of the Blended Learning Concept (see Chapter 7): **face-to-face facilitated learning, e-facilitated learning, self-study, the learner (part-time student), the programme constraints and the pedagogic beliefs**. These nodes were at the heart of everything that took place in the action research. The observations, interviews, focus groups and documentation analysis were all concerned with the learning and the learning context. The six nodes could be said to be action research determined. As such matching the nodes with the type of blends that arise in the eight dimensions of blended learning is not straightforward. For example, pedagogy in the 'eight dimensions' sense of the word, is concerned with blends of different

pedagogies. In contrast, pedagogy as one of the six action research-based nodes is more concerned with the beliefs of staff, which cause them to structure the different delivery modes in the way they do. Similarly, delivery as far as the eight dimensions of blended learning are concerned, is about face-to-face and distance education. As far as the six nodes are concerned, delivery is not only concerned with the different modes of delivery but also with self-study, the learner, the programme and the pedagogic beliefs, i.e. with everything addressed by the action research. In the six theme sense of delivery, face-to-face, e-facilitated, self-study, the programme, and the pedagogic beliefs can be thought of as the '**Fine Structure'** of delivery.

Eight dimensions of blended learning – comparison with this study		
Type of blend:	Example Adapted after (Sharpe, Benfield et al. 2006:18)	***This study***
delivery	different modes (face-to-face and distance education)	Yes
technology	Mixtures of (web based) technologies	Yes
chronology	Synchronous and asynchronous interventions	Yes
locus	practice-based vs. class-room based learning	Yes
roles	multi-disciplinary or professional groupings	No
pedagogy	different pedagogical approaches	Yes
focus	acknowledging different aims	No
direction	instructor-directed vs. autonomous or learner-directed learning	Yes

Table 25: Eight dimensions of blended learning – comparison with this study

Although an early view adopted in this research that blended learning was mainly about the use of different modes of delivery evident in the eight dimension framework, the data analysis that led to the six nodes soon convinced the researcher that the theme approach which focused on the Fine Structure of delivery was a better way to conceptualise blended learning, particularly if one had a concern for the improvement of learning facilitation. Even at the observation stage of the first action research cycle it was becoming evident to the researcher that delivery was a far more complex matter than was suggested by Sharpe, Benfield et al (2006) in their eight dimensions framework. This was especially true if the improvement of learning facilitation was to be addressed.

8.2.2 Stakeholder perspectives

Next, it is useful to compare the Six-Themed Blended Learning Concept with the stakeholder perspectives as outlined by Orey (2003). Orey defines blended learning from three perspectives: learner perspective, designer/teacher perspective and administrative perspective. The Six-Themed Blended Learning Concept incorporates all three perspectives; however, the relationship is not explicit. The learner perspective is addressed by the different learning facilitation (face-to-face sessions, e-facilitated learning and self-study), the designer/teacher perspective is addressed via the pedagogic beliefs theme and the administrator perspective is represented by the programme specific issues theme i.e. the context of the learning. Orey's learner perspective suggests that the learner has the flexibility to select from different facilities. The learner (part-time student) theme in the Six-Themed Blended Learning Concept covers the same issue i.e. it suggests that learning is individual and it is the learner who is in-charge of what is learned. The key difference between Orey's definitions and the Six-Themed Blended Learning Concept is that the latter does not perceive blended learning as three disjointed perspectives. Rather, it sees blended learning in terms of six nodes which are inter-dependent (see Table 26: Comparison of Orey and the Fine Structure of the Blended Learning Concept).

Comparison of Orey and the Fine Structure of the Blended Learning Concept	
Orey's perspectives	*Fine Structure of the Blended Learning Concept*
Learner perspective	face-to-face facilitated learning, e-facilitated learning and self-study
Designer/teacher perspective	Pedagogic beliefs
Administrator perspective	Programme specific issues

Table 26: Comparison of Orey and the Fine Structure of the Blended Learning Concept

The comparison highlights that the perspectives of Orey are useful in discussing blended learning. However, because Orey treats the different perspectives as almost independent entities, they become disjointed. Consequently, they are not very effective when considering the description and development of a blended learning programme. Disjointed perspectives are not a particularly good way to address the issue of learning improvement. The Six-Themed Blended Learning Concept allows us to accommodate Orey's three perspectives into

one coherent structure that takes account of the multiple issues of a blended learning programme and helps the students to understand and plan their study. This is done by allowing them to see that learning is not only done in the face-to-face sessions but it is also e-facilitated and requires self-study. The teacher's perspective is enhanced by giving the main nodes that outline the constraints of the programme and emphasise that the student should be made aware of the facilities. Based on the pedagogical choice, the blended learning programme has to address the three learning locations (face-to-face, e-facilitated and self-study) which need to take into account the students' attributes and the programme constraints (facilities, infrastructure and the subject being taught).

8.2.3 Spatial representations of e-learning

The Spectrum of E-learning (Procter 2002) positions blended learning between contact learning (0% electronic) and distance learning (100% electronic). This suggests that blended learning is a sub-section of e-learning and implies that it has to utilise electronic media and face-to-face sessions. It is possible to describe the studied programme on the Spectrum of E-learning, since it utilised face-to-face evening sessions and e-facilitated learning via Blackboard and other electronic tools. However, the Six-Themed Blended Learning Concept goes beyond this simplistic description. It not only addresses the learning that takes place through these delivery methods but also the context of that learning.

A two dimensional representation of blended learning concept was developed early in the research and discussed in Chapter 2 [see Figure 7: Concept of Blended Learning adapted after Heinze and Procter (2004:2)]. This representation placed blended learning in a 'time spent on online learning' and 'use of information technology' space. The representation was useful for differentiating blended learning from pure face-to-face and pure online learning. It was also useful for comparing different examples of blended learning. However, the model has limitations both in conception and in its application. For example, the model does not identify 'self-study' as an important aspect of blended learning, nor does it address the issue of learning context (pedagogic beliefs, learner characteristics (part-time student) or overall programme related issues). It might be possible to address these matters by introducing a third dimension, say a social dimension, to the representation. However, it was decided not to address this in the current work.

8.2.4 Student centeredness

The argument that blended learning cannot be defined solely from the teacher's perspective (Oliver and Trigwell 2005), suggests that the student has to play a major part in the blended learning design and development process. This means that students' views have to be taken into account and that the profiles of students should be established in order to facilitate a programme of a blended learning nature. To some extent all programmes of learning do involve students' views in their design, development and in their delivery. For example, in the current programme the justification for the blended learning was based on the profiles of part-time students, particularly, knowledge of their limited time to attend face-to-face sessions. Further, the action research approach to programme improvement means that it was understood from the beginning that student views would strongly influence development of the delivery of the course.

However, simply approaching blended learning from the student perspective is not necessarily the best way to move forward. Not all students are necessarily interested or willing to contribute to the conversations necessary for their learning improvement or for the general improvement of the programme. Further, students can vary widely in their views; this was most certainly the case in the current programme. This is not to say that student views should be ignored but that a great deal of care and effort must be made in ascertaining what students really think about the delivery of a programme. This is taken onboard in the Six-Themed Blended Learning Concept. The need for student centeredness was accepted as was the need for the continuing consultation of students. However, it was also taken on board that students would change their views as they moved forward on a programme and that this change would take place alongside changes in staff perception. This captures both the challenge and the strength of an action research approach. The challenge is concerned with getting both the teacher-student interaction and student-student interactions to work well, as will be discussed later in this chapter in relation to pedagogy (see section 8.3). If this can be done then a meaningful student perspective is a possibility. It must always be kept in mind that action research is a very much a group effort and one that is aimed at improvement. In the light of the above discussion, the assertion made by Oliver and Trigwell (2005) is valid, but limited. The current action research whilst acknowledging the students' perspective, augmented this simplistic view by incorporating a great deal of staff reflection as evidenced by the Six-Themed Blended Learning Concept.

8.2.5 Blend as an improvement of learning

The issue of improvement is not explicit in the Six-Themed Blended Learning Concept. Nevertheless, by identifying the six nodes as points for considerations of any blended learning programme, the concept is focused on learning improvement. The nodes are concerned with learning and the learning context and in paying attention to these one is implicitly concerned with the improvement of learning.

As was evident in students' comments (Chapter 6), blended learning was not the prime reason for their choice of the part-time programme. Nevertheless, once on the programme and exposed to the use of the Blackboard Virtual Learning Environment, some found blended learning an attractive way of learning and Blackboard a most beneficial support mechanism. Those students who had prior experiences of pure online learning, were also complimentary about blended learning, particularly since it provided opportunities of face-to-face interaction with other learners and teachers. The students valued such interactions because not only did they provide opportunities to discuss complex issues, but also because they acted so as to improve motivation. Of course, not every face-to-face session worked well. Where they did, as will be discussed later in the pedagogy section of this Chapter, the lecturer in charge and the pedagogic beliefs used seemed to be the key. However, the point being made here is that implicit in the **'social interactions'** present in blended learning is a search to improve learning.

8.2.6 Preliminary definition of the blended e-learning concept

This section (8.2) has been re-visiting the blended learning concept in the light of both an extensive reading of relevant literature and the experiences of an action research programme lasting over two years. All of this has contributed to changes in the thinking of the researcher about the blended learning concept. From Sharpe, Benfield et. al. (2006) it was learned that there were many ways of thinking about blended learning; they identified eight different ways or dimensions in which the term was used. An analysis of the action research programme identified six nodes representing blended learning (see Chapter 7): **face-to-face, e-facilitated, self-study, the learner, the programme and the pedagogic beliefs**. These nodes were undoubtedly action research generated. However, they did seem to represent all that was relevant to the delivery of blended learning. It was noted here that the term 'e-facilitated' was introduced. This was done to take on board the broad idea of e-learning. E-learning accepts

that there are other technologies as well as online which can be used to **facilitate learning**. Attempting to match the six nodes developed through this research and the eight dimensions of Sharpe, Benfield et. al. (2006), proved difficult. However, some re-thinking about the term delivery led to the assertion that the six nodes could be thought of as the components or **'fine structure' of delivery**.

Orey's work (Orey 2003) on blended learning stakeholder perspectives also caused the researcher considerable reflection. Considerations of blended learning from the perspectives of: **learners; designer/teachers; and administrators** have much to recommend them. Indeed, the action research programme did consult from the three perspectives. However, a problem arose when trying to take on board Orey's idea that the three perspectives should be treated independently. The researcher considered such an approach to be disjointed. The reason behind this thinking was that the researcher was engaged in an **action research** approach, which is much more **integrated** in its collection of stakeholder views. Its aim is the continual **improvement** of the situation it addresses through interaction between stakeholders. Nonetheless, by drawing attention to the different stakeholders, Orey did re-enforce the researcher's thinking about the significance of the Six-Themed Blended Learning Concept. In identifying **pedagogic beliefs** and **programme specific issues** as two of the nodes, the Six-Theme approach matched almost exactly Orey's designer teacher and administrator perspectives. A new definition of blended learning would have to take this on board.

One other issue needs some discussion before attempting a revised definition for blended learning that will satisfy the needs of the current research and that will possibly be of wider applicability. The issue is that of whether to talk about 'blended learning' or 'blended e-learning'. In Figure 7: Concept of Blended Learning adapted after Heinze and Procter (2004:2) 'online learning' is said to be 'pure e-learning'. This is true, but this, as has been mentioned earlier, does not mean that e-learning is synonymous with online learning; e-learning can take on a variety of forms. When it comes to discussing blends that involve face-to-face delivery it is usually a matter of blending face-to-face delivery with a form of e-learning. Consequently, one could talk of **blended e-learning**. In Chapter 1, it was stated that blended e-learning is the most recent description of what had been termed by different authors: blended learning, hybrid learning and mixed mode learning. This seems to be the case. Littlejohn and Pegler (2007) in their publication "Preparing for blended e-learning" state that:

> *"…what is commonly referred to as blended learning… we can think of as blended e-learning"* (Littlejohn and Pegler 2007: 28)

The researcher thinks that this change is appropriate, since blended learning could, in principle, as might have been the case in the past, refer to learning that had no e-learning element.

With all the above in mind, the researcher believes that an appropriate definition for blended e-learning for the current study would be:

*Blended e-learning refers to: the **learning** which takes place through a combination of face-to-face facilitated learning, e-learning and self-study and which is designed, delivered and developed with a focus on the **learning context**: the learner, the programme constraints and the pedagogic beliefs.*

This definition, which might be termed a local definition, is certainly suitable for the programme of study under examination. It embraces how learning was delivered but also takes on board how the delivery was both designed and developed i.e. how changes aimed at learning improvement were addressed. Obviously, the first part of the definition is quite explicit whereas the second part requires some understanding of what is meant here by learning context. As such, the definition as it stands would not be immediately applicable to other programmes. Since the current work wishes to develop a widely applicable definition of blended learning, this matter will be addressed later in the Conclusions, Chapter 9.

The following section will concentrate on the research question concerning pedagogy on the studied programme. The action research findings are compared with the literature and amendments to a pedagogic theory suggested.

8.3 The Key Issues of Blended E-learning Pedagogy

The previous section provided an overview of blended e-learning theory as identified in the literature and related it to the information which emerged from the four cycles of action research. This highlighted the complexity of a blended e-learning programme and advanced the understanding of the Fine Structure of the Blended E-learning Concept.

This section discusses the Key Issues of Blended E-learning Pedagogy that were highlighted during the action research and crystallised in Chapter 7: communication; social aspect of learning; and assessment. This section is sub-divided into two parts: Firstly, each key issue is discussed in relation to the pedagogic theories as identified in the literature review. Secondly, the use of Conversation Theory is extended into the area of blended e-learning, based on the Key Issues of Blended E-learning Pedagogy which are highlighted in this research.

8.3.1 The current research and pedagogic theory

This section relates the early thinking on pedagogy to the Key Issues of Blended E-learning Pedagogy that emerged from the current study. The historical developments are traced back to associationism and functionalism, behaviourism and constructivism and the emphasis will be placed on the student-teacher and student-student interaction.

The early pedagogies, such as apprenticeship, relied on close collaboration between the student and the master and incorporated face-to-face communication, social interaction and periodic assessment. In contrast, students on a blended e-learning programme spend much of their time away from their teachers and if close collaboration is to take place it will have to take place in new ways.

When considering the pedagogy at the early university and relating it to our three key issues, it can be argued that the early university teaching process was not necessarily effective in facilitating learning. The communication was predominantly one way – where the master talked at the students. This teaching method was still being practiced in the current study, and the students were as dissatisfied with monologues as they had been in earlier times. The students wanted a better understanding of a subject and this required a lecturer to pay as much attention to them as they did to the lecturer; they wanted to actively engage in the learning process. Not all staff were aware of this or, if they were aware, did not respond to students' needs. There were still occasions when students had to face three hour almost non-stop lectures. Clearly, the search for new ways to bring about close collaboration between the teacher and the taught is not simply a matter of identifying the problem and designing solutions, but also a matter of getting academic staff to change their old and trusted ways.

We will now focus on the early pedagogy related studies (associationism and functionalism), which were predominantly concerned with the structuring of the teaching process.

8.3.2 Associationism – functionalism and the key issues of interest

The associationism versus functionalism debate has been discussed in Chapter 2. Although the debate goes back over 100 years, it still has relevance to today's educational issues and to the current work. Both theories give some stress to the importance of communication. The associationist perspective on communication would be concerned with the teacher's logical breakdown of the learning material into five stages: preparation, presentation, association, generalisation and application (Beck 1965). As such, it was very teacher-orientated and could be said to be a model for those who still believe that one-way communication is an effective way in facilitating learning.

In contrast, the functionalism based teaching approach breaks down teaching into: realisation of a problem, inspection of a problem, hypothesis building, solution building and hypothesis testing in practice (Ibid.). Such an approach to teaching relies on the student to initiate the communication with the teacher and ask for support and guidance. Obviously, this approach does promote two-way communication. However, it, like associationism, places emphasis on structure of communication and seems to ignore the issues of social interaction and assessment. With regard to social interaction, the functionalist would argue that this takes place in discussions between the teacher and the student. Whilst this is important, social interaction in the current research is mainly concerned with student-student interaction, which is seen as being vital for blended e-learning pedagogy. In the current research, assessment is accepted to be a major issue, providing students with feedback, confidence and motivation.

Both associationism and functionalism have added to our knowledge of teaching and learning. However, both seemed to be very restrictive in their thinking and their highly structured approaches seem inadequate to address the issues that have been identified as central in the current research. The work of behaviourism and constructivism is examined next.

8.3.3 Behaviourism - constructivism and the key issues of interest

Behaviourism and constructivism were discussed in Chapter 2. Both grew out of the associationism and functionalism debate. Behaviourism emphasises the role of the environment (*stimulus*) and the way that it impacts on the development of individuals (*response*) (Shepard 2000). It is the environment that makes an individual. With regard to teaching and learning, behaviourists believe that competence in any field is arrived at by the mastery of small steps. It is the task of the teacher to break a field down into small and logically arranged steps and to take the student through those steps, testing them at each stage – which provides the necessary re-enforcement of learning. Testing (or assessment) acts as a motivator.

Behaviourist thinking is common amongst trainers. For example, driving instructors use a 'small steps' re-enforcement of learning approach to give students mastery of a complex task. The small steps-re-enforcement approach is to be found in current educational practice and was present in the some of the teaching and learning in the current study. Communication is in part about breaking learning down into manageable 'chunks'. Regular assessment, both for formative and for summative purposes, is a feature in some of the modules in the current study. The one issue that behaviourism seems to have little to offer to the current study is that of social interaction. Behaviourism, like associationism, does not concern itself with student-student interactions and the motivations that can arise through social group interaction. Further, unlike functionalism, it does not even allow for student initiated learning. The behaviourist theory emphasises the importance of the learning environment, and the objectivity of teaching, however, it fails to recognise the individuality of learners. The stimulus and response behaviour does not provide the opportunity for individual learning, it assumes a positivist philosophical view which does not take into account learners'

> *"talents, penchants, tendencies, abilities, vocations…"* (Watson 1997:82)

As was discovered in the current research, such characteristics cannot be ignored in a consideration of pedagogy for blended e-learning (see for example sub-section 5.3.2.4).

Social constructivism has some similarities to behaviourism. For example, both see teaching and learning as a structured process. However, in contrast to behaviourist theory, the beliefs of social constructivism allow us to account for the learners' differences and build on these as

an integral part of the learning process (Wertsch 1985). Since learning is socially and culturally determined (Shepard 2000), it is important to start the teaching and learning process by identifying the learner's position and allowing them to interact with others to facilitate their learning. In the current study, student-student interaction was designed into most of the modules. Learning was facilitated by a number of group assignments and peer collaborations in face-to-face sessions. Obviously the ideas of social constructivism have been taken seriously by some. Teachers were moving 'from Sage on the Stage' to 'Guide on the Side' (see Chapter 2).

As mentioned earlier, students entered the current programme with considerably different educational and industrial experiences. For some, the gap in their knowledge compared to their peers was simply too large. It became embarrassing to them and several withdrew from the course.

Any theory, which starts with the learners' positions and encourages them to interact with one another has much to offer to studies where social interaction and communication have been highlighted as key issues in the Key Issues of Blended E-earning Pedagogy. It also has much to offer to the third key issue, assessment. The key difference between constructivism and behaviourism, with regard to assessment, is that in constructivist settings, assessment is primarily concerned with thinking and problem solving skills and is used as feedback on how students learn. In behaviourism, the concern is with what students can remember, this being an end in itself. However, both theories agree on the breaking of a large subject into smaller sections and assessing these separately.

The constructivist theory which does allow us to explain the role of assessment is Constructive Alignment (Biggs 1999). Constructive Alignment theory recognises the pragmatic problem with the current higher education teaching environment, namely, that some students are not motivated to learn for the sake of it, that they have a number of other competing priorities and that they require motivation in the form of assessment. In aligning the three components of a) curriculum objectives, b) teaching/learning activities and c) assessment tasks, a Constructive Alignment between a), b) and c) is achieved (Biggs 1999). Some authors suggest that the assessment should be continuous and should be conducted whilst the process of learning is taking place and not at the end of it:

> *"In order for assessment to play a more useful role in helping students learn, it should be moved into the middle of the teaching and learning process instead of being postponed as only the end-point of instruction."* (Shepard 2000:10)

The thinking of Constructive Alignment proponents is in line with what was experienced in the current study (see section 7.5.3.). As the programme progressed, the action research participants became increasingly aware of the motivational role of assessment and the fact that assessment should be an integral part of teaching and learning rather than something that is almost an add on to the process. This also suggests that the current study was right to identify assessment as a key issue for blended e-learning pedagogy.

So far, the data from this research supports the social-constructivism theory of learning and allows us to understand why our three key issues have emerged as problematic in this research. The following section examines six theories which highlight the role of teacher-student and student-student interaction. These six are discussed from both the teacher-student and the student-student perspectives. In respect of teacher-student interaction, Conversation Theory, Learning Conversation and the Conversational Framework are examined. To advance our understanding of student-student interaction, three useful theories are identified: the Johari Window, the Communities of Practice and the Zone of Proximal Development.

8.3.4 Teacher – student interaction

Teacher-student interaction is at the heart of several constructivist theories which emphasise the role of a dialogue to facilitate student learning. The following sub-section will be concerned with the Conversation Theory, Learning Conversation and Conversational Framework, and these will be examined and compared to the three inter-related Key Issues of Blended E-earning Pedagogy.

8.3.4.1 Conversational Framework

The Conversational Framework was discussed in Chapter 2. It involves a three cycle, twelve stage framework for communication between the student and teacher throughout the learning process. The Framework was identified as one of the theories providing an attractive option for designing and implementing the current blended e-learning programme (Heinze and Procter 2004; Heinze, Procter et al. 2007). Consequently, the Framework was used to

structure a module on the current programme and influenced thinking about other modules (see Chapter 6). The perceived strengths of the Framework were highlighted during the current research: the iterative nature of the communication addressed the issue of early feedback to the learner and consequently acted to increase their confidence; it provided a structure for the delivery of a module; the structure gave students many opportunities to interact with their teachers; dialogue was encouraged through the Framework.

The research highlighted some problems concerned with possible weaknesses of the Framework (see Chapter 6). These were: the lack of integration of student-student communication and the consequent lack of social student interaction; the assumption that students would engage in a dialogue, even though it was not to be assessed; it is very prescriptive and hence too complicated for large groups of students. Overall, the use of the Conversational Framework was judged to be a qualified success, however it was believed that there might be a better way of addressing pedagogy in blended e-learning. This brings us to Conversation Theory, which is the originator of the Conversational Framework.

8.3.4.2 Conversation Theory

The previous sub-section examined the Conversational Framework as one of the dialogic constructivist theories. The roots of the Conversational Framework lie in the work of Gordon Pask and Bernard Scott in the Conversation Theory (Scott 2001a). This has been discussed in Chapter 2. Although Conversation Theory per se was not used in the design, development and delivery of the current work, it does, in the light of experience with the programme, seem to offer a great deal to Key Issues of Blended E-earning Pedagogy.

Simply focusing on ‘why?’ and ‘how?’ questions make the idea of the Skeleton of Conversation in the Conversation Theory easier to deal with in practice, than the intertwined twelve stages of the Conversational Framework. As identified in Chapter 2, the Learning Conversation augmentation (Harri-Augstein and Thomas 1991), which grows out of Conversation Theory, also emphasises the important skill of *learning to learn*. This skill gives students the benefit of understanding the pedagogy that underpins their learning. This is something that is considered to be important in the development of blended e-learning pedagogy and is therefore taken on board.

Being dialogical, Learning Conversation addresses one of the three emerging Key Issues of Blended E-earning Pedagogy on the programme, namely communication. It suggests that communication should be structured in such a way that it allows for staff – student interaction and also offers opportunities for clarification and student support, which were some of the main concerns of students on the programme. Because of its simplicity, it has the advantages but not the drawbacks (or complexity) of the Conversational Framework in dealing with communication. However, the two other key issues identified in the current work, i.e., assessment and social interaction are not integrated in the Learning Conversation. Furthermore, neither the Conversation Theory nor the Learning Conversation emphasizes the importance of student-student interaction.

8.3.5 Student-student interaction

The introduction of technology, as in blended e-learning, means that the natural socialisation of students could be significantly reduced. Such socialisation was identified in the current work as one of the Key Issues of Blended E-earning Pedagogy. So far, none of the theories discussed addresses this key issue, particularly the matter of student-student interaction. The following three concepts: the Johari Window; the Communities of Practice; and the Zone of Proximal Development, do address this matter.

8.3.5.1 Johari Window

At the centre of the Johari Window concept is the assumption that each individual has their strengths and weaknesses. Using their strengths they are able to help others to develop their areas of weaknesses. Therefore, groups comprising of individuals with different abilities are desirable to promote learning. This theory helps to explain the benefits of peer learning and the social interaction required to facilitate it. If, for example, students are not afraid of posting questions on the module discussion boards and others are willing to help them, this facilitates the learning of both – those who receive help and those who provide it. Students who provide help can be considered as teachers and because the activity of teaching facilitates 95% of learning (Biggs 1999), this is one of the most effective activities from a students' learning perspective. Student-student collaborations provide multiple opportunities for students to gain feedback on their learning as discussed in Chapter 6.

The Johari Window thus relates to all three key issues raised in Key Issues of Blended E-earning Pedagogy. Communication is addressed by emphasising the need for students to interact with each other, be it online or in the face-to-face sessions. The social interaction aspect is almost a pre-requisite for communication facilitation and it is a side effect of communication amongst people. The role of assessment, whilst not explicit in the Johari Window concept, is nonetheless present. Student-student collaborations on assignments with associated feedback provide the opportunity for formative assessment. All of this suggests that the Johari Window is a useful concept in both the practice and theory of blended e-learning pedagogy, particularly in its contribution to a better understanding of student-student social interaction.

The next two theories which also highlight the need for student-student interaction are Communities of Practice and the Zone of Proximal Development.

8.3.5.2 Communities of Practice and Zone of Proximal Development

Two other ways of looking at student social interaction are through Communities of Practice (CoP) theory and the Zone of Proximal Development (ZPD) (see Chapter 2).

The fundamental idea of both the Communities of Practice and the Zone of Proximal Development is that individuals who interact socially are learning from each other. This thinking certainly coincides with what was experienced in the current study. Students, whether interacting in face-to-face sessions or electronically, found great benefit in social interaction. Not only did they learn from one another, but they also gained a confidence that came from not feeling alone (see Chapter 6). Thus, the key issue of social interaction identified in the Key Issues of Blended E-earning Pedagogy fits well into the idea of CoP. Having said this, it is important to point out that whilst group work did encourage students to bond, it was not a positive experience for all students. When the group was homogeneous with regard to vision and ambition, everything seemed to work well. However, in more heterogeneous groups difficulties often arose. It would seem that special care must be taken in the assigning of students to groups. This must be done whilst keeping in mind the fundamental idea of students learning from one another. Other difficulties arose when students had to work with one another at a distance i.e. electronically. ‘Students learning from

one another' is a powerful idea but it is one that certainly needs to be properly managed by the facilitators.

Neither communication nor assessment feature explicitly in the CoP. However, good communication is assumed in all that goes into learning from one another. Further, since group assignments are one of the key ways in which students do learn from one another, formative feedback within group work occurs quite naturally.

The assumption of the Zone of Proximal Development is that for learning to take place in groups there must be one or more individuals who are more capable than the others. The 'more capable other' could be a teacher but is more likely to be a student. Except for this factor, the ZPD and the CoP are similar. The ZPD does not mention assessment explicitly and communication is assumed. However, in the idea of the 'more capable other' the ZPD does highlight an issue that was apparent in the current work. It did not seem to matter whether one was dealing with individual assignments or group assignments, there was always a more capable individual that came to the fore. If a student was struggling and posted a message on a discussion board there was always another student or a member of staff who replied. It could be that the ZPD thinking makes too much of the 'more capable other idea'; provided students are willing to communicate with one another, there always seems to be someone who is willing to help advance the development of the others. Of course, a willingness to communicate with others depends upon how well the social interaction between learners is developed. The current study is right to place emphasis on social interaction for the blended e-learning pedagogy.

The next section will build on the discussion of Key Issues of Blended E-earning Pedagogy raised in this research and generalise it to a concept which could be used by other scholars in their development of blended e-learning pedagogy. The particular emphasis will be on the Conversation Theory, since it was perceived as flexible and able to accommodate the three key pedagogical issues that have been identified in the study – communication, social interaction and assessment.

8.3.6 Pedagogy for blended e-learning: Blended E-learning Skeleton of Conversation

So far the discussion Chapter has established that Key Issues of Blended E-earning Pedagogy of communication, social interaction and assessment are acknowledged in several pedagogic theories but that their role is often not made explicit. This could be due to the fact that previous research was concerned with traditional teaching and learning practices, which were primarily facilitated in face-to-face settings. The integration of learning technologies into the higher education curriculum has highlighted the need to rethink pedagogy in general in order to facilitate student learning. This section provides an amalgamation of the discussion so far and develops a Blended E-learning Skeleton of Conversation.

8.3.6.1 Communication

Generally, the findings of this study support the constructivist beliefs of learning. One of the crucial issues highlighted in constructivist thought is the use of continuous interaction between the student and the teacher. The process is a two way communication, allowing a student to gain feedback and guidance on their learning progress. The data and the above discussion also identified that the Conversational Framework provided a good starting point to structure the communication between the teacher and the student. The importance of learning structure is widely recognised and supported in the constructivist paradigm, which should be publicised to the students prior to learning taking place (Biggs 1999). However, whilst it is useful to structure the learning activities there were some limitations of the Conversational Framework as identified by staff and students on this programme. It appears that the Skeleton of Conversation as developed by Pask and Scott and augmented by Harry-Augstein and Thomas provides a better, more flexible starting point for structuring the conversation.

In the light of all the above, it was decided that the Skeleton of Conversation would be at the core of the proposed blended e-learning pedagogy. A representation (see Figure 41: Blended E-learning Skeleton of Conversation) outlines the main issues highlighted by the Skeleton of Conversation (the additions are italicised and are on gray background is used). The initial stage of communication is represented by the top left quadrant, which signifies the teacher's explanation in terms of the learning process. This addresses the 'why' and 'how' questions and responses, allowing students to engage with learning how to learn. The next interaction,

which is concerned with the 'why' and 'how' of the subject being studied, is represented by the bottom left quadrant in the figure. The Blended E-learning Skeleton of Conversation will now be used to discuss both assessment and social interaction.

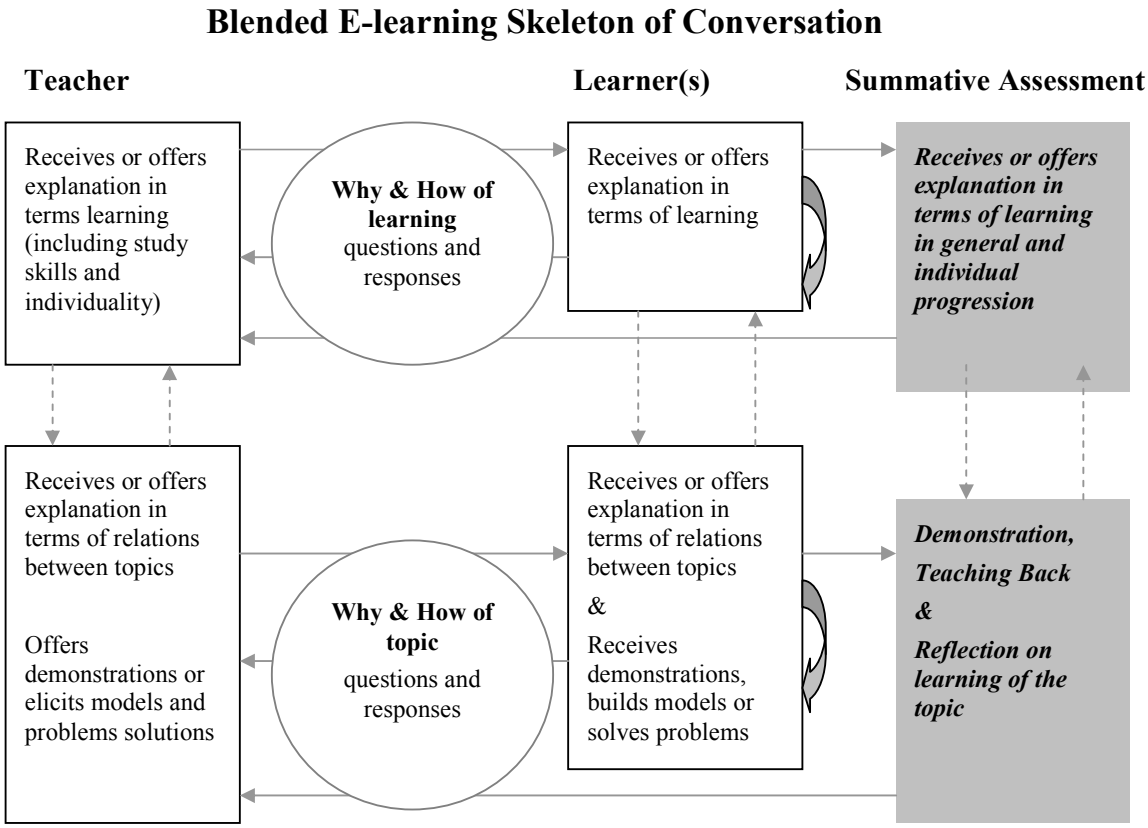

Figure 41: Blended E-learning Skeleton of Conversation

8.3.6.2 Assessment

Discussions of the data in this work highlighted the important role of assessment, particularly its role as a motivator. Assessment is built into the model as a 'Summative Assessment column'. However, this representation is not meant to indicate that assessment is at the end of the teaching process, but rather, as is indicated by the arrows, something that takes place throughout the process. The arrows also signify the need for multiple assessments on any module.

Assessment should aim to assess both the learning of learning (top right quadrant) and learning of the topic (bottom right quadrant). These two elements serve to structure feedback and communication about potential improvement. Summative assessment could focus on a

student's explanation in terms of learning reflection and individual progression (top right quadrant). In practice, this could be a written document or a log book. The assessment related to the topic (bottom right quadrant), could include for example, the production of a software artefact, which would demonstrate the student's understanding of a certain programming concept.

Although this figure advocates the use of summative assessment, which, according to constructivist belief is not the most appropriate way to encourage learning (Shepard 2000), it does reflect the experiences of the current study, which showed that formative assessment was not always taken seriously by the students. This model is also in line with the Constructive Alignment, as advocated by Biggs (1999), which suggests that each curriculum objective should be aligned with assessment. In the Blended E-learning Skeleton of Conversation, the Constructive Alignment is symbolised by the horizontal arrows that lead from the teacher towards the learner and backwards via discussion and summative assessment.

In applying the Skeleton of Conversation to assessment in Blended E-learning it is important to be aware of the limitations of the Conversational Framework with regard to scalability (see 8.3.4.1). Nonetheless, it is possible to make suggestions as to how scalability could be addressed. For example, in online discussion board collaborations it is possible to assess individual contributions to the collaborations. In the case of multiple choice questions, assessments could be carried out electronically. Other examples could be given, however, the point that is being made is that a Constructive Alignment approach within the Blended E-learning Skeleton of Conversation is of great importance and that all attempts should be made to make assessment an integrated part of blended e-learning pedagogy.

8.3.6.3 Social interaction

A third major improvement to the Skeleton of Conversation idea is the incorporation of the thinking behind the Communities of Practice, Zone of Proximal Development and the Johari Window, all of which emphasize the social interaction amongst students. This is illustrated in Figure 41. The two 'quadrants' positioned in the middle of the figure: 'Receives or offers explanation in terms of learning' and the 'Receives or offers explanation in terms of relations between topics, receives demonstrations, builds models or solves problems', have a curved left arrow to indicate a social interaction element. This model implies that there are multiple

learners involved in the process, however, since practice might not always allow this, it is also applicable to one learner. Reflection with the teacher could provide this element. The vertical arrows on this figure are similar to the original Skeleton of Conversation of Pask and Scott, and represent the causal connection between the learning of learning and learning of the topic.

From the above, it is apparent that the emergent pedagogy on a blended e-learning programme is context bound. As such, it does provide points of reference and discussions for any future blended e-learning programme developments.

The next main section of this Chapter will review some of the chief pragmatic lessons learned as part of this action research. These key issues will be structured using the Bermuda Triangle of Blended E-learning which emerged from the second stage of data analysis (see Chapter 7).

8.4 Pragmatic implications of the Bermuda Triangle of Blended E-learning

The previous two main sections of this Chapter have discussed the concept and pedagogy of blended e-leaning in relation to the current work. The Fine Structure of the Blended E-learning Concept that emerged from the data analysis was discussed in relation to the concepts of blended e-learning identified in the literature. The Key Issues of Blended E-learning Pedagogy: communication, social interaction and assessment; that informed blended e-learning pedagogy were also discussed in relation to existing theory. Drawing on the Conversation Theory of Pask and Scott, a Blended E-learning Skeleton of Conversation was proposed to facilitate both future discussions and the designing of blended e-learning programmes.

Building on the action research work done chapters (Chapter 5 and 6), this section attempts to highlight the main issues that were observed in practice. This section is broadly sub-divided into two sub-section, the first discusses the pragmatic staff development issues identified in the current work and the second is concerned with the Bermuda Triangle of Blended E-learning.

8.4.1 Staff development

An underlying finding of this study, which highlights all the issues of action research, is the individuality of academic staff and their development (see Chapter 6). This is confirmed by the literature, where there is evidence to suggest that individual lecturers play a major part in student learning and make a significant difference to students' learning experiences (Cullen, Hadjivassiliou et al. 2002; Wilson and Stacey 2003). In addition to their given subject competence, it is often assumed that academic staff are able to teach well. However, this study has highlighted that pedagogy is often not a main concern of academic staff (see sub-section 5.3.2.5)**.** Academic staff teaching skills have been identified as a source of concern by others, for example: Biggs (1999), and Shepard (2000). Some authors suggest that it is the development of academic staff and their individual views that limit educational improvement (Shannon and Doube 2004; Wilson and Stacey 2003). It would be encouraging to think that academic staff were at least reading the pedagogic literature. However, the current research shows that this is not the case. Shepard has pointed out that the functionalist views of Dewey were publicised over 100 years ago, but:

> *"I am reminded of Linda Darling-Hammond's (1996) acknowledgement in her presidential address that John Dewey anticipated all of these ideas 100 years ago. But as Cremin (1961) explained, the successes of progressive education reforms never spread widely because such practice required "infinitely skilled teachers" who were never prepared in sufficient numbers to sustain these complex forms of teaching and schooling."* (Shepard 2000:12)

It is believed by many staff in higher education that the simple act of engaging in teaching and learning involves academic staff in staff development (McNaught and Kennedy 2000; Partington and Stainton 2003). There must be some truth in this. Some staff development must take place whilst engaging in teaching and learning, as there must be in the day-to-day practices of any profession. What is being talked about here is learning-by-doing (Bullen and Janes 2007; O'Reilly and Ellis 2002). However, it is also true to say that all professions see the benefit of engaging individuals in continuing professional development i.e. staff development. In principle, action research is an ideal way of engaging academic staff in their own development (Kember 2000; Zuber-Skerritt 1996). Academic staff are highly individualistic, but when working together on a common problem – for example, the delivery of a blended e-learning programme – in ways that involve a great deal of student feedback and which bring them together on a regular basis, there is almost unavoidable staff development taking place. If this process can benefit from the introduction of theoretical

perspectives then it seems logical to do so. In the current study theoretical perspectives were introduced into academic staff deliberations. In terms of staff agreement with such perspectives the process was not always a success. However, the process always seemed to engage staff in thinking about pedagogy some liked it others did not, but the thinking was undoubtedly taking place. By approaching teaching on this blended e-learning programme as part of research, this work has enabled learning on the programme and as Biggs (1999) suggests this is the most effective way to develop staff.

The Fine Structure of the Blended E-learning Concept identifies three learning-related nodes: face-to-face facilitated learning, e-facilitated learning and self-study which form the Bermuda Triangle of Blended E-learning. The following sub-section will discuss the three learning-related nodes of the Bermuda Triangle of Blended E-learning and highlight some of their main pragmatic implications.

8.4.2 Face-to-face facilitated learning

This section will focus on three issues related to the use of the face-to-face sessions. These are: the role of the induction; social community; and teacher-student interaction.

8.4.2.1 Induction

In this research, student induction has been found to be particularly important for part-time students, since they will have reduced face-to-face contact on the programme (see Chapter 5). Initially, the programme started with a short (approximately 4 hours) induction session. As the programme progressed, it was seen that there were simply too many matters that should have been addressed in the induction that were getting in the way of successful programme delivery. Consequently, a major change to the induction was recommended by the end of the fourth cycle and implemented shortly after this research concluded. The change involved the introduction of an entire module which focussed on research and information technology skills. The induction included the extensive use of the Virtual Learning Environment, which allowed students to experiment with the variety of tools and techniques within Blackboard. This was aimed at giving them both competence and confidence. This move is in line with the thinking of the 5 Stage Model (Salmon 2004), which highlights the importance of ensuring access as a fundamental step.

Induction also feeds into two of the three key issues discussed in relation to pedagogy: communication (introducing students to electronic media and helping them to become familiar with it as discussed above); and social interaction (students will be given an opportunity to work with their peers to build peer learning opportunities). The latter leads us to the next important issue, that of students being part of a student community.

8.4.2.2 Social community

To address both the lack of face-to-face contact and the importance for students to maintain social interaction during the programme's duration, a number of practical steps were implemented. The initial set-up was such that students had a designated online discussion board called Virtual Café, where students had a chance to discuss issues that were not necessarily study-related (Bell and Heinze 2004b). Initially, due to the high number of students, class photographs with associated names were published. This allowed students to have a point of reference when they wanted to talk to someone. As the students on the first cohort were progressing through their study, this forum became quite popular. Some messages were simply fun-related, with some of the students sharing jokes and photographs taken from the face-to-face sessions. A number of students were interested in organising social events such as going for a meal; the Virtual Café facilitated the organisation of this. On one of the first modules, at the end of the semester, students and staff teaching on the programme went out to a pub for a social evening. The social interaction of students was encouraged in line with the work of Communities of Practice (Wenger 1998b), Zone of Proximal Development (Vygotsky 1935/1978) and Johari Window (Luft and Ingham 1955b).

As mentioned previously, the second cohort of students did not manage to get such a successful social dynamic (see sub-section 7.5.2). Actions - more group assignments; more class-based group activities - were taken to attempt to improve this situation. However, the important points worth noting are: that when students do develop a social community, it is most beneficial to their learning; that a dynamic social community cannot be guaranteed – its facilitation needs to be viewed as a priority.

8.4.2.3 Teacher- student interaction

Face-to-face contact, as was discussed above, is most important in bringing about a dynamic social community. However, face-to-face sessions in the current programme were designed to

offer students the chance to ask the 'teacher' questions and receive feedback and support. This is not the usual purpose of face-to-face time. Usually, when students meet lecturers it is to receive instruction related to content. Students are free to ask questions but the main purpose of a session is to ensure that all the content that needs to be covered is so covered. Most certainly face-to-face sessions in the current work did have the usual purpose. However, they were, as has been stated, designed to offer more of a dialogue. By the time of the third action research cycle, it was increasingly apparent that the students wanted more of the dialogue type of session and less of the traditional lecture type of face-to-face session (see section: 6.2.2.6). The student thinking on this matter was in keeping with the constructivist literature. Interaction in the form of a student-teacher dialogue is at the centre of several learning theories such as the Conversational Framework (Laurillard 1993; Laurillard 2002), Conversation Theory (Pask 1976; Scott 2001a) and Learning Conversation (Harri-Augstein and Thomas 1991).

In the light of the student thinking about face-to-face sessions, some staff made serious attempts to respond. They attempted to reduce the number of hours being lectured and replace these with interactive activities such as discussions. This preferred use of the face-to-face session gave students the opportunity to show their progress on their coursework, get feedback, and get motivation from staff supporting the programme. However, as discussed above, maters were not always straight forward. Discussions often led to assignments, which when summative in nature tended to overburden the students, and when formative in nature, tended to be ignored. Furthermore, when summative assignments were set they had to be assessed and if they were not assessed quickly enough students complained (see section 7.5.3). The speed at which feedback is given (i.e. not fast enough) appears to be a frequent issue identified in studies concerned with e-facilitated learning (Hara and Kling 1999).

As might have been expected, some lecturers were not happy with reducing the lecture content of their face-to-face sessions in order to provide a more genuine dialogue (see Chapter 6). Despite an action research approach to the development of the programme and despite student feedback, they stuck to their traditional way of using nearly all of their face-to-face session time for lectures. Students were obviously not happy with this state of affairs. Having said this, it is important to note that when lecturers took entirely the opposite view, i.e., devoted all of their face-to-face session to dialogue, students were again not happy (see Chapter 7). Obviously, there is a need to strike the right balance in using the face to face

sessions. During the course of the action research, the programme was getting closer to striking this balance, but, a great deal of work still needs to be done.

Having discussed the three main face-to-face related aspects, the second theme of the Bermuda Triangle of Blended E-learning is discussed below. This focuses on the e-facilitated learning.

8.4.3 E-facilitated learning

It was perceived as essential to use the face-to-face sessions to facilitate induction, student-student interaction, and teacher-student interaction. However, due to the blended nature of this programme, students spend the majority of time on their own and this relies on them communicating electronically with peers and teaching staff to facilitate continuous learning. The four specific issues related to e-facilitated learning are: the use of the Blackboard Virtual Learning Environment; discussion board moderation; SkillSoft learning objects; e-facilitated assessment.

8.4.3.1 Use of Blackboard Virtual Learning Environment – central support

The programme adopted the use of a centrally-provided Virtual Learning Environment, which was Blackboard version 6. A number of tools were used within Blackboard to facilitate electronic communication. These were: document sharing – where staff uploaded their PowerPoint lecture slides and any electronic handouts; discussion boards - for any general support issues, such as help with assignments and general module support; and assignment management – where students could electronically submit their work. Overall, the Blackboard technology facilitated a number of useful ways for student interaction and therefore encouraged learning. However, there were also some difficulties. The inconsistent use of Blackboard sites by individual module leaders was confusing to students, and the attempts to introduce a common navigation structure were rejected by lecturing staff, due to their individual needs (see Chapter 6). Nonetheless, when for reasons of technical failure Blackboard was down, there were a number of student complaints (see Chapter 6), highlighting the increasing student reliance on this technology to facilitate their learning.

The current research suggests that Blackboard provided all the necessary features to facilitate learning. This is consistent with other research on this subject such as: (Britain and Liber 2004; Paulsen 2003). As identified in the literature, there are generally five learning related purposes: [1) Publication, Information dissemination; 2) Communication; 3) Collaboration; 4) Information and resource handling; 5) Specific for teaching and learning purposes]. All of these were fulfilled within the given Virtual Learning Environment. We will now focus on some of the key areas of Blackboard use, the first area being discussion boards.

8.4.3.2 Discussion board moderation

On the studied programme, discussion boards provided an interactive communication tool that allowed a means of sharing knowledge. The main benefit observed when compared to email communication was the structured threading of discussions, so that it was possible to see the development of a topic; students were able to share their views on any issue being discussed and to provide multiple replies. The moderation of discussion boards was problematic at the beginning (see Chapter 5). Basically, the students did not know how to use the technology properly so as to work harmoniously and productively with others. Consequently a discussion board guide was established and implemented (Bell and Heinze 2004b).

During the four cycles of actions research the discussion boards proved to be most useful. All of the benefits of discussion boards as outlined in the literature [see (Yanes, Pena et al. 2005)] were observed to some extent. The first benefit, relating to student interaction, was observed in the current study in the sense of teamwork and collaboration which took place. It might have been that these qualities were brought about in great part through the face-to-face sessions. However, there were strong indications that discussion boards had made a significant contribution to these qualities. The second benefit, relating to putting all students into active roles, was observed in the current study. Some students were more outspoken in the face-to-face environment and others were more extrovert in the online environment. However, eventually nearly all students did make a contribution to online discussions. This observation differs from that of Yanes, Pena et al. (2005), who claim that *all* students will take an active role. The third proposed benefit, of enhancing the teacher-student relationship, is one which was slightly problematic in the current study. Some academic staff tended to ignore the discussion boards. Obviously, it is not possible to comment on the benefits of discussion boards for such staff. However, in those cases where lecturers did get involved there seemed to be an improvement in teacher-student interaction.

The fourth benefit suggests that discussion boards encourage higher thinking skills. The results of this study confirm this thinking. The indicator for this was the marked improvement witnessed in the overall quality of messages posted on the discussion boards. It would be a mistake to say that all students improved the quality of their messages, but many did. Those that did, when challenged, demonstrated that they were using higher level thinking skills, for example, problem-solving skills. Nonetheless there were some, who when challenged, posted banal replies and questions. Whether such students are simply unhappy with the technology and, lacking in confidence, refused to think at the right level conceptually it is impossible to say. The fifth benefit suggested by Yanes, Pena et al. (2005) is the flexibility to communication brought about by the online discussion boards. This study found this to be the most supported of the five benefits. Students were able to interact at different times of day and they did so.

Overall, the research found that discussion boards had both advantages and disadvantages, but that the disadvantages could be minimised through discussion board guidelines, see Chapter 6. This study supports the use of the 5 Stage Model (Salmon 2004) to structure e-moderation. Criticism of the 5 Stage Model (Chowcat 2005; Jones and Peachey 2005; Lisewski and Joyce 2003; Moule 2007) has probably resulted from the rigid application of the model to the teaching process. Consequently in the current study, a flexible application of the 5 Stage Model was utilised. As a result, the 5 Stage Model was generally helpful in structuring online interaction and particularly in identifying the need for student induction and socialization. At the module level, most staff on the programme used discussion boards in their own way, sometimes changing from module to module in the light of both student feedback and their own experiences. Consequently, it is not possible to identify a typical discussion board. However, where discussion boards were used the benefits were visible. The discussion will now focus on SkillSoft learning objects.

8.4.3.3 Use of SkillSoft learning objects

Several book publishers offer electronic resources that can be integrated with Blackboard. These include supporting electronic material such as PowerPoint presentations, summary notes and multiple choice questions. Several modules utilised these resources by linking from within the Blackboard module sites. This allowed students the opportunity to engage with a range of activities and thus to focus their learning. The main limitation with these resources was that they were not particularly interactive. For example, viewing PowerPoint slides online

was not as helpful in facilitating learning as students being present in a face-to-face discussion structured around the slides.

Learning objects provide a solution to the lack of interaction in online media (McGreal 2004). They build on the principle of theory that suggests breaking down the teaching content into manageable self contained objects that provide flexibility and opportunities for re-use (Ibid.). In this study, SkillSoft learning objects was used. The observed advantages of SkillSoft were that it allowed flexibility of study for students and was more interactive than say a webpage or a PowerPoint presentation. Overall, SkillSoft was considered helpful in providing an additional source of reference for students but it was not appropriate as a replacement for face-to-face sessions. The limitations of SkillSoft included the lack of adaptability of the content being taught, technical access problems and the inappropriateness of certain types of content (Heinze and Ferneley 2006). The experience on this programme mirrors other research conducted in the use of SkillSoft, which suggests that the use of generic learning objects fails to address specific learner needs (Parrish 2006; Snyder 2003).

The next issue considered is the use of assessment on the programme and how it was facilitated in the electronic environment. Blackboard allows a number of options for assessment use and these were discussed in detail in the relevant action research cycles (See Chapter 4 and 5).

8.4.3.4 E-facilitated assessment

Blackboard was used for the facilitation of assessment. Several types of assessment were used. These included assessed online discussion board collaborations, multiple choice tests and general electronic assignment file submission. These three uses are discussed below.

The first use was in assessed discussion boards, which provided opportunities for students to interact with each other and participate in a learning activity over a long period of time. The actual assessment process happened on a continuous basis, giving students multiple opportunities to interact and improve their learning (Bell and Heinze 2004b). On the other hand, this study also highlighted problems associated with this type of assessment. Despite the low assessment weighting of this activity, students took it very seriously and those who

struggled with it, possibly because of inadequate prior knowledge, lost a great deal of confidence.

The second type of assessment used by some of the modules was multiple choice questions (MCQ). One of the key advantages of MCQ was that students gained immediate feedback on their learning. The other benefit of MCQs was their ease of re-use; once developed, they were available for students on every subsequent year and did not require any administrative support. Using the features within Blackboard, it was possible to set up a weekly release of MCQ's so that students were able to use them to gain formative feedback on their understanding of the topics being taught. The study suggests that MCQs are useful but limited in their application, since those tests enabled via Blackboard were relatively simple. The fact that MCQ's provide flexibility and are limited to assessing basic student knowledge is supported by others (Bull and Hesketh 2001). The current study also found that in situations where MCQs do not contribute to summative assessment they tend to be ignored by students. This has been commented upon by others (Warburton, Conole et al. 2003).

The third type of assessment used in the current study was the Assignment Manager feature within Blackboard. This allowed the setting and receiving of assignments without students having to attend face-to-face sessions. The process of submission and returning of assignments varied. Some staff printed the work and gave students a hard copy with comments, whilst others used the electronic copy to provide students with feedback. Feedback could be typed rather than hand written, eliminating problems of reading lecturers' comments. The benefit of being able to see which students had submitted their work and which students had outstanding assignments was facilitated through the seamless integration of Assignment Manager with Blackboard Gradebook. Further benefits of electronic assignment management included flexibility for the students in being able to submit their assignments from anywhere in the world, as well as a reduction in the use of paper (in some cases) and ease of administration. Additionally, the time of submission could be set at midnight, allowing students extra time to make any finishing touches to their work. The disadvantages of electronic submission experienced on this programme included: corrupted assignment files; problems with Blackboard down time, resulting in students not being able to submit their work by the deadline; file version incompatibilities; and other technical problems (Whatley and Heinze 2007).

The next sub-section of this Chapter will discuss self-study, the third element of the Bermuda Triangle of Blended E-learning.

8.4.4 Self-study

The importance of self-study was understood by all academics at the outset of the current programme. In contrast, it was observed that some students viewed the face-to-face sessions and online discussions as being the only time when learning was to be undertaken and had given little consideration to the idea of self-study. This was unfortunate. On courses that utilise information communication technology self-study is recognised as an important skill (Hege, Ropp et al. 2007; Hughes and Lewis 2003; Van Schaik, Barker et al. 2003). Working on an assignment, reading books, reflecting and researching are activities that are vital in the learning process. They are also activities that students have to engage with on their own. The complementary activities of face-to-face facilitated learning and e-facilitated learning are, in part, aimed at building students' confidence so that they are better prepared to undertake self-study. However, as was observed in the current study, it was easy for students to be inadvertently misled into believing that face-to-face and e-facilitated learning had done away with the need for self-study. Building on the Blended E-learning Skeleton of Conversation, the importance of *learning to learn* is yet again emphasised in respect of self-study, at the outset of every module on a blended learning programme there is a need to remind the learners of the self-study role.

In response to the above problem, academic staff built-into their modules the idea of assignments that would require self-study. However, as has been mentioned in section 7.5.3, in order to motivate students to engage with such assignments, it was necessary to ensure that the assessment counted towards their module mark. Within this context, there were a number of techniques employed to further motivate students. The assignments were broken down into smaller components, the assessment of which gave students quick feedback on their progress and consequently helped to build their confidence. Having said this, the issue of ensuring that students understand the importance of self-study and are appropriately motivated to undertake it still needs to be addressed.

A summary of the discussion Chapter follows. This draws on the three main sections concerned with the concept of blended e-learning, pedagogy and pragmatic issues that have emergent from the data collection.

8.5 Summary

This Chapter has discussed the questions asked in the introduction to this thesis (the questions were addressed in reverse order):

a) What are the **pragmatic** implications of blended learning?
b) How is **pedagogy** affected by blended learning programme delivery?
c) How is blended learning **conceptualised** locally?

In doing this, references to the findings from all four cycles of action research and to the literature were made.

Firstly, this work discussed the Fine Structure of the Blended Learning Concept in relation to the literature. The confusion surrounding the use of the term 'blended learning' also confirms the view in the literature, that there are very different interpretations of blended learning and that these fuel misunderstandings surrounding this term. A better term, 'blended e-learning', was advocated resulting in the Fine Structure of the Blended E-learning Concept. This encapsulates the use of learning technologies and the concept of distance learning. An attempt at a definition for blended e-learning was made.

Secondly, several pedagogic theories were examined in relation to the Key Issues of Blended E-earning Pedagogy. All had some utility, but all were found to be of limited usefulness to the blended e-learning programme being studied. Because of the emergent need to address communication, dialogic constructivist pedagogy was chosen to provide a base for blended e-learning pedagogy. The explicit incorporation of student-student interaction and summative assessment were also addressed. As a result the Blended E-learning Skeleton of Conversation was developed. This augments the original work of Pask and Scott.

Thirdly, staff development was discussed as the major pragmatic issue influencing the success of a blended e-learning programme. To focus on staff development, specific pragmatic issues

of the Bermuda Triangle of Blended E-learning have been discussed. These issues are associated with student learning in relation to the use of the face-to-face facilitated learning, e-facilitated learning and self-study.

The next Chapter will examine all research questions posed at the beginning of this thesis, bringing together the ideas introduced in the discussion Chapter and contributions to knowledge. The research process will be evaluated, limitations highlighted and future research directions suggested.

Chapter 9 Conclusions

9.1 Introduction

The previous Chapter discussed the current research findings in the light of the literature. There were a number of similarities found and some differences. Generally, the data collected in this study supports several theories and previously published research. However, there are several augmentations to the existing body of knowledge. The data allows us to further develop the concept of blended e-learning, illustrates the way it can be integrated with pedagogic theory and also highlights pragmatic areas of staff development which could help blended e-learning facilitation.

Before introducing the work of the final Chapter, it is worthwhile revisiting the context within which this research took place and the roles of the researcher. In 2003, the University of Salford introduced a part-time programme aimed at the award of a BSc in Information Technology. It was agreed that a blended learning approach to programme delivery would be utilised. It was also agreed that an action research approach to delivery and the development of the programme would be used. It was further agreed that a graduate teaching assistant would be employed to carry out the necessary research. His roles would include: supporting the day-to-day running of particular modules on the programme; supporting students through online, face-to-face, telephone and email communication; the support of the administration of Blackboard VLE in all its aspects – the creation of groups, assignments/ assessments, moderation of discussion forums and student/staff training; and the evaluation of both student and staff feedback. It was also agreed, through the appropriate research committees, that the research undertaken in the above process would be worthy of preparation for a Ph.D. degree.

This Chapter will bring together the research, the literature which informed the research and the previous discussions in order to address the research questions posed at the start of this thesis. The three themes – see Figure 42 below - that were explored throughout this study will

be used to structure the conclusions drawn. This will form the basis for the contribution to knowledge for current research.

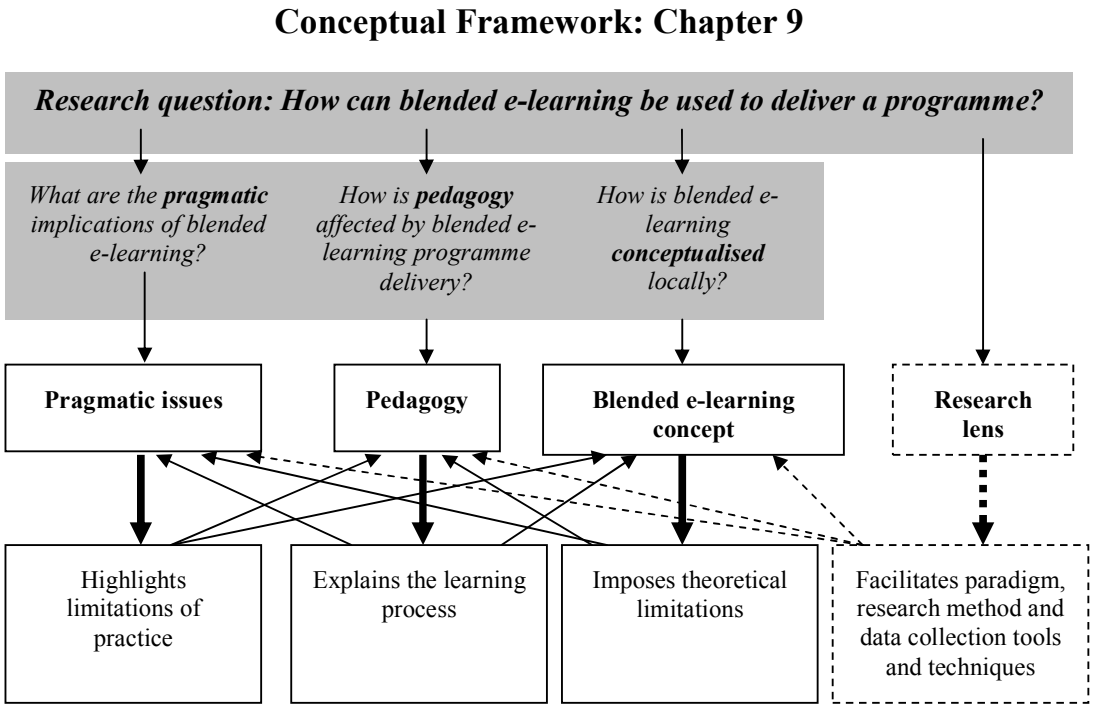

Figure 42: Conceptual framework: Chapter 9

The Chapter is structured in the following order: The first section is concerned with the subject of this work, which proposes contributions to knowledge based on the research questions. The research questions are updated to reflect the change in terminology as emerged from the discussion Chapter (use of 'blended e-learning' instead of 'blended learning') and they are:

How can blended e-learning be used to deliver a programme?
a) What are the **pragmatic** implications of blended e-learning?
b) How is **pedagogy** affected by blended e-learning programme delivery?
c) How is blended e-learning **conceptualised** locally?

These inter-related questions will be addressed in reverse order. The issue of a definition for blended e-learning will be re-visited and some recommendations made.

The second section of the Chapter is concerned with the research process of this work. The set of principles for conducting and evaluating interpretive information systems research (Klein

and Myers 1999) is used to reflect upon the research process undertaken. The final section of the Chapter reflects on the limitations of this work. Bearing in mind these limitations, suggestions for future work are provided. The Chapter is ended with final conclusions of overall reflection on an action research based Ph.D. findings.

9.2 Contribution to the domain of IS research in educational settings

The contributions proposed by this research will be structured around the research questions posed. For each question the structure will address the four issues of contribution: *audience, literature, new insight and use*, as suggested by Walsham:

> *"...construct our piece to aim at a particular type of audience or audiences. In addition, we can ask to what literature we are aiming to contribute. Thirdly, what does the piece of written work claim to offer that is new to the audience and the literature? Finally, how should others use the work?"* (Walsham 2006:326)

The first issue to be addressed is concerned with the contribution to knowledge in the domain of information systems research conducted in educational settings.

9.2.1 How is blended e-learning conceptualised locally?

The audience to which the contribution of this sub-question is aimed is researchers and practitioners who are seeking a conceptual understanding of blended e-learning [see for example: (Oliver and Trigwell 2005; Orey 2002; Sharpe, Benfield et al. 2006)]. The literature to which the contribution is made relates to the use of blended e-learning to structure learning. Some of the early versions of this work such as Heinze and Procter (2004), have been published and are already cited in the appropriate academic literature [see examples: (Cubric 2007; Günther 2005; Monteagudo 2006; Strother, Fazal et al. 2007)].

New insight generated by this work confirms the belief that blended learning is subject to many local interpretations, confusing its usability. The predominant view on the programme was that blended learning was mainly **about delivery**. It was about the combination of face-to-face and online sessions, not about blends of technology, chronology, locus, pedagogies, etc. as highlighted by Sharpe et al. (2006). It was with this in mind that it was suggested that

the term 'blended e-learning' be adopted. This focuses attention to the fact that to a greater or lesser degree e-learning is a key delivery method. **It is recommended that the term 'blended e-learning' is used whenever blended learning involves online delivery.**

The data analysis in this research led to the idea of a **'Fine Structure of the Blended E-learning Concept'.** The nodes quite naturally divided themselves into nodes that were *learner-related* and nodes that encompassed *the context* in which learning took place. The '**learning'** nodes comprise: **face-to-face facilitated learning, e-facilitated learning and self-study**. The **'learning context'** is characterised by the individual **learner (in this case the part-time student), the pedagogic beliefs of the individual facilitator and the programme related issues** (including infrastructure such as the Virtual Learning Environment, rooms and other facilities). In Chapter 8, an attempt was made to use this thinking to provide a definition for blended e-learning that would be appropriate in a local setting i.e. a definition that would act as a guideline for the developers of the current programme. The definition arrived at was:

Blended e-learning refers to: the learning which takes place through a combination of face-to-face facilitated learning, e-learning and self-study and which is designed, delivered and developed with a focus on the learning context: the learner, the programme constraints and the pedagogic beliefs.

This definition was kept in mind during part of the latter cycles of action research and during the preparation of this thesis. It is a definition that will be useful as the further development of the BSc in Information Technology takes place. However, the author is reluctant to suggest that the definition could be of wider applicability at this time. This matter will be discussed later.

The suggested use for the above contributions to knowledge is as points of reference in identifying the main nodes of blended learning developments. The idea of **'blended e-learning'** focuses attention on **delivery**. Differentiating between the *learning* and the *learning context* not only re-enforces the idea of how learning is delivered, but also stresses the importance of their inter-relationship. Considerations of the latter are perceived as being vital in the successful delivery of blended e-learning programmes.

9.2.2 How is pedagogy affected by blended e-learning programme delivery?

The audience for the blended e-learning pedagogy contributions is particularly researchers in the field of blended e-learning. In addition, the audience would include those practitioners who wish to use theory to inform their practice. The use of a Virtual Learning Environment in the current study highlighted the important role that pedagogy has to play when implementing blended e-learning. A contribution to the literature on the practical use of pedagogic theories has been made by some of the preliminary findings [such as (Heinze, Procter et al. 2005)] of the current research and in this thesis. **This work has underscored the Key Issues of Blended E-learning Pedagogy of: communication, social interaction and assessment.** In doing this, it makes a contribution to blended e-learning pedagogy**.** It has also illuminated the benefits to the understanding of these issues that come from theoretical perspectives.

The first significant influences on the current work came through considerations of Conversational Theory (Pask 1976; Scott 2001a) and the Conversational Framework (Laurillard 1993; Laurillard 2002). The latter focused the attention of the researcher on communication, particularly between the student and the teacher. A module was developed using the Framework. This development highlighted the limitations of the Framework, which failed to address the issues of social interaction and assessment, and was judged to be too complicated. Conversational Theory led to considerations of the Skeleton of Conversation (Scott 2001a). This, in a relatively simple way, dealt with the issue of student – teacher communication. In addition, it was easily modified to yield a model which incorporated both social interaction (student-student interaction) and assessment. This was given in Figure 41: Blended E-learning Skeleton of Conversation **(**See section 8.3.6). The model shows the interactions between the key issues in blended e-learning pedagogy.

Further insights into social interactions were given by the Communities of Practice (Wenger 1998a), Zone of Proximal Development (Vygotsky 1935/1978) and Johari Window (Luft and Ingham 1955b). Social interactions had been identified as a key issue in blended e-learning pedagogy and these theories helped to explain aspects of social interactions. Insights into assessment, the third key issue, were obtained from Constructive Alignment (Biggs 1999); the need for continuous assessment and quick feedback from Hara and Kling (1999).

As with the previous contributions, the findings of this study identify key issues that need to be addressed by practitioners and researchers when dealing with blended e-learning related pedagogies. The Blended E-learning Skeleton of Conversation can be used to structure a module delivered on a blended e-learning programme. This contribution is a guideline and not a rule. Local customisations might be required based on the subject being learned, the infrastructure available and, most importantly, the abilities of teaching staff. The key issues identified in this work can guide staff development sessions, student inductions to learning on a blended e-learning programme, and the formation of conceptual frameworks at the outset of similar research in other settings.

9.2.3 What are the pragmatic implications of blended e-learning?

The audience for the pragmatic implications of blended e-learning is similar to that of the previous sub-question, which looked at the concept of blended e-learning. However, the work will be of particular interest to practitioners and researchers in the area of learning technologies and techniques. At the general level, both practitioners and researchers could benefit from readings in: **the facilitation of online communication (Heinze and Procter 2006); the enabling of online communities governance (Bell and Heinze 2004b); the electronic assignment management (Whatley and Heinze 2007); and the use of off-the-shelf learning objects (Heinze and Ferneley 2006)**. Some of the recommendations by Heinze and others quoted above have already been cited in the literature [see for example: (Chu and Hernandez-Carrion 2006)].

Staff development was identified as a crucial issue for blended e-learning implementation in practice. As was mentioned in Chapter 8 (see section 8.4), there is some truth in the widely-held belief that simply to engage in the development of a programme will result in staff development. However, as was demonstrated in the current research, not all staff engage appropriately in developments that call for new approaches to teaching and learning. Even in a department that specialises in information systems, not all staff were comfortable with either the technology of blended e-learning or the consequences of a blended e-learning approach. The presence of an action research approach in the current work certainly helped bring people into staff developments settings. One is tempted here to recommend that developing programmes adopt action research approaches or something similar. However, in the absence of such approaches, all that can be recommended is that **staff development is recognised as a high priority.** As a priority there would be many possible measures that could promote staff

development. These could range from funded away days to the introduction of appropriate reward and recognition systems. It might be that the most effective way to develop staff is to have them approach teaching as if it were research as advocated by Biggs (1999). If this were to happen then there would be no hesitation in recommending an action research approach.

Communication in blended e-learning appears to be an enabler but also a challenge if not appropriately managed (Heinze and Procter 2006). Since staff and students have multiple media at their disposal for communication, misunderstandings can occur and the '**Bermuda Triangle of Blended E-learning' effect can result in students being 'lost'**. As discussed in Chapter 8, the three nodes of the Triangle – face-to-face facilitated learning, e-facilitated learning and self-study – are not simply components of an overall delivery system, each of which can be treated separately. They interact with one another. Face-to-face and e-facilitated learning can, quite accidentally, result in students ignoring the need for self-study. A loss of confidence when attempting to use e-facilitated learning can affect student's confidence in face-to-face facilitated learning and self-study. Discussions, whether e-facilitated or face-to-face can lead to assessed assignment overload with the obvious consequences for all learning. The Bermuda Triangle of Blended E-learning is an area where students can get lost. It is also an area which can change size and shape. The consequence of all of this is that the three elements of learning cannot be treated independently of one another. **It is recommended that blended e-learning programmes treat face-to-face, e-facilitated and self-study elements of delivery/ learning in an integrated manner.**

Managing the three aspects of learning (face-to-face, e-facilitated and self-study) requires raising awareness of the importance of each in the minds of both staff and students on any blended e-learning programme. One way of raising the awareness could be by integrating 'learning to learn' into the pedagogy of each module, as described in the Blended E-learning Skeleton of Conversation (see Chapter 8).

The face-to-face element of learning is, on first examination, the element most familiar to academic staff, i.e. it is the element that is easily taken for granted. Unfortunately, taking face-to-face sessions for granted in the current study led to many problems (see Chapter 8). In order to avoid the mistakes made in the current study, it is important to keep in mind that face-to-face sessions are the key means of communication in a blended e-learning programme. Such sessions are where students interact with both teachers and with one

another. They are where socialisation takes place, where confidences are built and where students are supported in their e-facilitated and self-study work. The only way to design and deliver face-to-face sessions is through the integrated approach to learning, as was recommended above. An integrated approach will lead to the right balance between lectures and dialogue. It will also ensure that dialogues are appropriate and timely. **Once again, it is recommended that an integrated approach to delivery and learning is adopted in blended e-learning programmes.** In the context of an integrated approach, the nature and the special place of face-to-face sessions needs to be recognised.

The findings in this work support the usefulness of the 5 Stage Model (Salmon 2004) in structuring e-facilitated learning. In particular, findings suggest that the face-to-face sessions allow for better socialisation stages in the model. The findings also suggest that the model can be used as a flexible guide and hence the criticism that results from its rigid application (Chowcat 2005; Jones and Peachey 2005; Lisewski and Joyce 2003; Moule 2007) can be disregarded. **For those undertaking blended e-learning developments, Salmon's '5 Stage Model', used in a flexible way is very useful and can be recommended.**

The communication tools offered through Blackboard Virtual Learning Environment proved to be useful for the practice of blended e-learning. This finding supports research suggesting that Virtual Learning Environments allow adequate facilities for student learning (Britain and Liber 2004; Collis 2002; Paulsen 2003). In particular, electronic assessment management, offered through both multiple choice questions and assignment manager features within the Blackboard VLE, was found to be most useful, although there are still some technical difficulties **(Whatley and Heinze 2007).** The use of 'off-the-shelf' learning objects supports the view that these are not very useful in the higher education environment, but could be said to contribute another resource for enhancing student learning **(Heinze and Ferneley 2006)**. A need for further work on the governance of online communities has been identified and addressed in this research using online discussion guidelines **(Bell and Heinze 2004b).**

Before leaving the matter of pragmatic implications of blended e-learning, it is important to make some concluding remarks regarding self-study. In Chapter 8, it was pointed out that it is easy for students to come to believe that the work they do through e-facilitated and face-to-face sessions satisfies all their learning requirements and that self-study can be ignored. The setting of formative assignments did not seem to improve the situation in the current study;

summative assessments did bring about an improved attitude to self-study but this in itself is not enough. Self-study in a blended e-learning programme is of vital importance and from the experience in the current research it is an issue that still needs to be addressed. An integrated approach to learning on a blended e-learning programme is obviously part of the solution. However, this work can do little more than 'flag' self-study as a problem area that can arise.

9.2.4 How can blended e-learning be used to deliver a programme?

The audience for these contributions is practitioners in both the information systems and educational subject domains. The contributions may be of interest to people ranging from policy makers to curriculum developers in both commercial and public sector organisations.

A good starting place for developing and delivering a blended e-learning programme is to address the question: 'What is blended e-learning?'. This matter was discussed in Chapter 2 and Chapter 8. The latter discussion attempted a definition that would be useful at the local level. The definition arrived at is given below:

Blended e-learning refers to: the learning which takes place through a combination of face-to-face facilitated learning, e-learning and self-study and which is designed, delivered and developed with a focus on the learning context: the learner, the programme constraints and the pedagogic beliefs.

This definition arose from the **Fine Structure of the Blended E-learning Concept** which was developed from the inductive data analysis process on the current programme. The six nodes were shown to fall into two categories: learning – face-to-face facilitated learning, e-facilitated learning and self-study; and learning context – learner, pedagogic beliefs and programme constraints. Initial attempts were made to modify this definition in order to give it wider applicability. However, during this time developments in thinking about both the practice of blended e-learning and its pedagogy resulted in changes of mind with regard to the search for a new blended e-learning definition. Looking from the point of view of the Fine Structure of the Blended E-learning Concept, the 'learning' nodes do exist within 'learning context' nodes. However, from the vantage point of pedagogy alone, it is possible to identify three key issues: communication, social interaction and assessment, which permeate all aspects of the learning context and hence could be described as a context within which

learning takes place. The question emerged as to whether it would be better to use a definition which placed learning in the context of pedagogy. At this time it was decided that whilst it made sense to focus on the delivery of learning in any definition of blended learning, it was not necessarily sensible to include the context of learning in the definition. The context of learning was important to whoever undertook the design and delivery of a blended e-learning programme. But, the implication of this was not that the definition must include context. Rather, it was that whoever undertook either blended e-learning development or research in the field should be aware of the contexts within which such development took place.

The above thinking was extended to considerations that grew out of the identification of staff development in blended e-learning as being a priority (see section 8.4). One way to ensure that staff were developed was to approach teaching as if it were research (Biggs 1999). Taking up Biggs's idea led to the thought that an action research approach to blended e-learning development was to be recommended. However, such an approach would be one of several that could be adopted if the matter was looked at from the quality assurance for students' improved learning point of view. All of this leads to the idea that blended e-learning could be defined as:

Blended e-learning refers to the learning which takes place through a combination of face-to-face facilitated learning, e-learning and self-study.

For those undertaking a blended e-learning programme development, two interrelated recommendations can be made. The first is that such developments take place within a framework that fully recognises the importance of the pedagogy being employed and its implications for all elements of the programme. The second recommendation is that such developments take place within a quality assurance framework which is aimed at the improvement of students' learning.

For those developing such frameworks, it is understood that the special nature of blended e-learning be central to their thinking.

The suggested use for the above conclusions is as guidelines for future blended e-learning-related research and programme developments. These conclusions can be used as conceptual

frameworks or research questions for action research or any other teaching-related research studies.

The next section will focus on the conclusions related to the research process undertaken in this study. Evaluation will be made against the interpretive paradigm and action research method guidelines as proposed by others.

9.3 Research process

The previous section was concerned with answering the research questions posed in this work. This section is in two parts: firstly, the research paradigm is appraised using Klein and Myers's (1999) criteria and then by the research method using Oates's (2006) guidelines for research evaluation.

9.3.1 Evaluation of the use of the interpretive paradigm

In order to assess the quality of interpretive research, there are a number of different methods that can be adopted (Klein and Myers 1999; Miles and Huberman 1994; Oates 2004). The interpretive field studies evaluation principles proposed by Klein and Myers (1999) are widely accepted in the field of information systems (Walsham 2006:326) and are therefore used in this work. An evaluation summary (see Table 27: Research evaluation summary) is used to address each of the Klein and Myers's principles by means of a general statement and an example to illustrate the exact application.

Research evaluation summary	
Evaluation principle after Klein and Myers (1999)	**This work**
1. The Fundamental Principle of the Hermeneutic Circle *This principle suggests that all human understanding is achieved by iterating between considering the interdependent meaning of parts and the whole that they form. This principle of human understanding is fundamental to all the other principles.*	This iteration was evident in the two analytical levels adapted: firstly, at the level of each action research cycle interaction and secondly, at the level of the entire research. Example: separate students' views at the discussion board level were also considered at a level of communication as a whole. This helped to determine the full meaning of the separate views.
2. The Principle of Contextualization *Requires critical reflection of the social and historical background of the research setting, so that the intended audience can see how the current situation under investigation emerged.*	The context was outlined focusing on the institution and on the programme to be researched. Both staff and students' characteristics were described and also formed part of the analysis process. Example: considerations were given to the historical background of part-time study, the current situation with regard to day-release and the social background of the students who were participating in the programme.
3. The Principle of Interaction Between the Researchers and the Subjects *Requires critical reflection on how the research materials (or "data") were socially constructed through the interaction between the researchers and participants.*	The interaction between the researcher (staff) and the subjects (students) was discussed as part of research implementation. This focused on the data types, sources and data analysis. Example: observations and data from student focus groups were discussed as part of the staff focus group sessions.
4. The Principle of Abstraction and Generalization *Requires relating the idiographic details revealed by the data interpretation through the application of principles one and two to theoretical, general concepts that describe the nature of human understanding and social action.*	The data was discussed in the context of existing literature. Existing models were modified to incorporate local-insights. Example: Interpretations of students' learning needs were discussed and emerging characteristics identified. Emergent views were discussed in the light of Communities of Practice and Conversation Theory and used to modify the Skeleton of Conversation.

5. The Principle of Dialogical Reasoning *Requires sensitivity to possible contradictions between the theoretical preconceptions guiding the research design and the actual findings ("the story which the data tells") with subsequent cycles of revision.*	As part of the action research, participants shared their views on theory and practice. Staff focus groups in particular allowed for multiple critical discussions of theory and data. External publications and presentations were made to seek critical opinions. Example: Conversational Framework was initially perceived as a viable option – *theoretical preconception*, but its application in practice provided contrasting views – *actual findings*. This caused revisions in thinking which were presented to a wider audience.
6. The Principle of Multiple Interpretations *Requires sensitivity to possible differences in interpretation among the participants as these are typically expressed in multiple narratives or stories of the same sequence of events under study. Similar to multiple witness accounts even if all tell it as they saw it.*	Each action research cycle provides a description of the programme and the associated interpretations. Within each of the issues discussed, multiple perspectives are used to illustrate differences. Example: the multiple views of individuals on learning location were highlighted using multiple accounts, such as in the face-to-face sessions, working on assignments, and self-study.
7. The Principle of Suspicion *Requires sensitivity to possible "biases" and systematic "distortions" in the narratives collected from the participants.*	The sensitivity of 'biases' was addressed as part of action research, which included multiple perspectives, multiple data collection sources and multiple data analysis stages. A 'rich description' of data was used to allow the reader to follow events as they unfolded. Example: The 'work done chapters' describe all four action research cycles (see Chapters 5 and 6).

The principles are adopted after 'Summary of Principles for Interpretive Field Research' (Klein and Myers 1999:72)

Table 27: Research evaluation summary

In addition to the above principles of interpretive research evaluation, a number of other steps were taken during the research process. The content of the current work was the subject of a continuous evaluation process both internally and externally, as evidenced through a number of conference presentations and publications. Some of the preliminary findings here have already contributed to subsequent research. For example: Sharpe, Benfield et al. (2006) have used findings from this work (Sharpe, Benfield et al. 2006).

Next, the research method will be appraised using the evaluation guidelines proposed by Oates (2006).

9.3.2 Evaluation of the use of the research method

The previous part of the evaluation was concerned with the philosophical paradigm evaluation as proposed by Klein and Myers (1999). This section examines the use of action research method in this study. The research was subject to multiple research process review meetings. These meetings were conducted with the research supervisor and advisor, who were also participants in the action research. The work was also subject to criticism in several internal and external doctoral school presentations and peer reviews. Feedback of these was incorporated in this work. An evaluation of action research as a research method was carried out. The results of the evaluation, which followed Oates (2006), are given in Table 28: Research method evaluation.

Research method evaluation	
Evaluation Guide: Action Research after Oates (2006).	**This research**
1. Did the work involve an iterative cycle of plan-act-reflect? How many cycles are described? Do you think this is enough?	1. This work utilised four iterative cycles of planning, acting and reflecting. The data emerging from the iterations was very rich and there were a number of emerging issues (211 nodes). This was judged as being sufficient to draw conclusions, and the data collection was ended.
2. Do the researchers make explicit their framework of ideas (F), methodology (M) and area of application (A)?	2. The framework of ideas was made explicit; blended learning was seen as incorporating face-to-face and online learning (*F*). Interpretive philosophical assumptions were used to ground this work and the research method was action research (*M*). The area of application was a part-time study programme in information technology (*A*).
3. What data generation methods were used? Do you think enough methods were used and enough data collected?	3. Data generation methods included: 6 focus groups with students, 10 student interviews, covert participant observation, 2 staff meetings, 2 staff focus groups, 5 support staff interviews and 14 lecturers' interviews. These methods generated 211 nodes, which were perceived as being sufficient to provide a rich description of this work.

4. Do the researchers discuss the extent of participation achieved, and any limitation in their claimed outcomes caused by lack of full participation?	4. The participation varied from module to module. In the four modules in which the researcher was personally involved, participation was at a very high level. There are limitations in this work due to the varied participation levels of academic staff and students. This is discussed in the action research implementation section of this work.
5. Do the researchers recognise the problems of self-delusion or group think, and explain adequately how they addressed them?	5. The issues of 'self-delusion' and 'group think' were recognised, discussed and managed by programme staff. The research was also subjected to external scrutiny through publications.
6. What practical and research outcomes and generalizations do the researchers claim from the action research?	6. The practical outcomes include for example: an improved understanding of the use of learning technology and revision of online discussion board guidelines. One generalisation that arises from the work is that action research could provide the framework for the quality assurance system within which blended e-learning developments take place.
7. How does the research measure up against the quality issues for new action research?	7. This research does not follow the critical philosophy as proposed by Oates (2006). Consequently, this question is not applicable here.
8. What limitations in action research do the researchers recognize?	8. There are a number of limitations as identified in the research design Chapter and addressed in the Chapter on research description (see Table 12: Action research risk management and mitigation).
9. Can you identify other flaws or omissions in the researchers' reporting of the action research study?	9. This research identified 211 nodes. Not all of these were discussed as part of this work.
10. Overall, how effective do you think the action research strategy has been reported and used?	10. The action research strategy was used throughout the four cycles of this study. It was highlighted in all reports and presentations. It is difficult to judge how effective the external presentations were.

Adapted after (Oates 2006:169)

Table 28: Research method evaluation

Action research was selected as a research method because of the opportunity for contribution to both theory and practice. Although it was a complex and intensive process, it is the view of the author that it was the correct decision to adopt action research. Despite some operational

weaknesses such as mixed participation levels of staff and students, action research offered rich insights into the programme improvement sought. Based on the above evaluation, it is considered that action research is an effective research method for information systems-based educational research. However, it is felt that action research made the research training process a complex experience for a novice researcher. A less ambitious research method may have been more appropriate for a Ph.D. level study.

The next section of this Chapter will discuss the limitations of this study and the future research opportunities that arise as a result of the findings. Several limitations will be inherent due to the selection of the research paradigm and the research method.

9.4 Limitations and future research opportunities

The previous section has evaluated this research from both the paradigm and the method perspectives. It is believed that this was an acceptable interpretive action research study that conforms to the expectations within the information systems research domain. We will now focus on the limitations of the current study and potential future research opportunities that emerge from the research.

9.4.1 Limitations

This thesis subscribes to interpretive beliefs and action research tenets. Therefore, it will not be able to withstand positivist scrutiny. Each data collection technique utilised in the current study, has associated limitations. The use of interviews and the focus on one programme within one institution yet again limits the findings. This work, like other interpretive arguments, is based on the perceptions of the author and is therefore, according to interpretive beliefs, subjective. This might imply a severe limitation to the work. However, the author does not accept that this need be the case. If the findings that grow out of one interpretation of an experience can be used successfully by other practitioners, then why should subjective work be considered as limited in its applicability?

9.4.2 Suggestions for future work

This thesis provided a number of insights in relation to the implementation of blended e-learning. However, it did leave a range of issues that could benefit from academic study. The theoretical recommendations based on this action research all deserve further study on both the existing programmes and in the new programme developments. It is felt that addressing the following three specific questions could bring considerable benefits:

How can the Fine Structure of the Blended E-learning Concept contribute to blended e-learning programme development?

How can the Blended E-learning Skeleton of Conversation contribute to blended e-learning programme development?

How can the Bermuda Triangle of Blended E-learning contribute to blended e-learning programme development?

In the light of the ideas that led to the thinking about a Bermuda Triangle of Blended E-learning, the issue of the interactivity between the elements of delivery/learning became prominent. In particular, the interactivity between e-facilitated and face-to-face on the one hand and self-study on the other became problematic. This is therefore an issue worthy of further research. Posing this issue as a question we would have:

What is the place of self-study in blended e-learning programmes and how can it be ensured that this mode of learning receives the attention it deserves?

The data collection process utilised an exploratory approach which was aimed at researching the breadth of issues relating to this programme. One potential continuation could be to devise a positivist based student survey which would be able to highlight the potential depth of issues on this particular programme and to compare it with the same survey in different settings. The research question could therefore be:

How far can the findings of this study be replicated in different contexts?

In this case findings could refer to any of the three main issues of this work: concept, pedagogy and pragmatic issues.

The element of self-study emerged at a late stage of this study and was not well explored. This inspires a number of research questions which could ask students about their self-study experiences. Common themes can be identified and results communicated to others in order to improve the effectiveness of self-study within blended e-learning. This can be done using student study logs or any other options which allow students to reflect on their learning process and learn how to learn on their own. A potential research question could be:

How to achieve successful self-study in blended e-learning?

9.5 Final conclusions

This final chapter has so far outlined the main lessons learned based on the research questions and the research process. One of the key findings of the current work is the Bermuda Triangle of Blended E-learning, which provides guidelines to the successful delivery of blended e-learning programmes. There are also some general conclusions that resulted as a by-product of this study and these are stated here.

This research set out to explore how the introduction of learning technologies in the concept of blended e-learning could be used for programme delivery. It was believed that blended e-learning was a way of structuring the delivery of the part-time programme in order to enable more students to take part in the higher education process. However, the actual improvement process provoked a wider reaching discussion, emphasising the complexities involved in such a multi-variable setting as the facilitation of learning. Although there were several improvements made and lessons learned, this was not because of blended e-learning, it was because of the individuals' commitment and desire to improve. Despite some of the technical issues, the majority of the problems encountered in this work remained social. In other words, if a discussion board is being misused, it is not a problem with the discussion board per se. The problem is concerned with the people who misuse the discussion board.

Chapter 10 Appendices

10.1 Appendix: Consent form

Research overview / Consent Form / Consent Withdrawal

Section A. Research overview

Dear student / member of staff,

As you know the IT Part-time course is delivered in a blended learning mode, that is there are elements that combine traditional and e-learning. We are continuously trying to improve the course and part of that endeavour is undertaken through research into teaching and learning methods used. We would therefore like to have your views in order to inform the future development of the course. The data will be collected by focus group, interviews, questionnaires, and course related electronic data (i.e. discussion boards and emails). We cannot guarantee that there will be any benefits to you from this research. Aleksej Heinze is conducting the research under the supervision of Chris Procter.

Please rest assured that:

Your participation is voluntary – you don't have to participate

Participation or refusal to co-operate will have no bearing on your course assessment

You can always contact the researcher if you have any queries regarding this research

Any information provided will remain confidential

You will not be identified, unless otherwise agreed.

Data held on computers and “hard” copy files will be held securely

Data collected will be fed back to you so that you can make corrections

Data analysis will be available on request

Your name and signature are used only as proof of reading the consent statement below – these will not be used in any other way

You can withdraw your consent at any time (using the Consent Withdrawal - section at the bottom of this page)

Please complete Section B or C at any one time - Thank you.

Section B. Consent Form:

I have read and understood Section A above. By signing below I agree that the information that I am going to provide will be used for the above research purpose.

Print Name: ……. Signature: …….

Date: …….

Section C. Consent Withdrawal:

I withdraw my consent to participate in research outlined above in Section A. By signing below I agree that any information given by me will not be used for the above research purpose. I also understand that this action will not influence my relationship with the researcher his supervisor or the University of Salford.

Print Name: ……. Signature: …….

Date: …….

Please forward above Consent Form or Consent Withdrawal to Aleksej Heinze,

Information Systems Institute, Ashworth Building, University of Salford, M5 4WT.

email: a.heinze@salford.ac.uk, further information can be found here: www.aheinze.me.uk

10.2 Appendix: Approval of this project by RGEC

10.3 Appendix: Graduate Teaching Assistant activities example

Action Research Cycle 1 (September 2003 – January 2004) - GTA Supporting module B:

- Student support
    - Online
    - Face-to-face
    - Telephone
    - Email
- Blackboard administration support
    - Setting up groups
    - General discussion boards support
    - Creation of Blackboard guides and training of the students to use Blackboard
    - Printing of electronically submitted assignments
    - Setting up online multiple choice questions and creating of these
- Exam invigilation support
- Open day creation of material and supporting/demonstrating to students

- Photocopying handouts for students

- Creating guides for students to follow on use of software and demonstration of this software in labs

- Copying CD's and distributing these to students

- Helping with creation of discussion board guidelines for the course

- Making sure that the lecturers have a projector and laptop for their lectures

- Maintaining a student register

- Marking discussion groups assignment

10.4 Appendix: Interviews and focus groups timeline

This appendix outlines the key interviews and focus groups undertaken in by the researcher:

12/01/04 - first focus group - original students - SAD and PBIS
10/05/04 - focus group - original students - Programming and MBO
19/05/04 - interview - Lecturer F
10/06/04 - interview - Lecturer C
02/07/04 - focus group - staff involved on the course
07/12/04 - focus group - New first years - SAD and PBIS
10/01/04 - focus group - Original students - Project Management and Databases
07/02/05 - interview - Lecturer G
15/02/05 - interview - Lecturer C
28/02/05 - interview - Support C
03/03/05 - interview - Support F
09/05/05 - focus group - Original students - Sys Prod and Networking
10/05/05 - focus group - New first years - Systems Analysis and Programming
11/05/05 - interview - Lecturer F
16/05/05 - interview - Lecturer A
16/05/05 - interview - Student D
16/05/05 - interview - Student E
16/05/05 - interview - Student G
17/05/05 - interview - Student A
17/05/05 - interview - Student C
17/05/05 - interview - Support B
17/05/05 - interview - Lecturer B
19/05/05 - interview - Support A
23/05/05 - interview - Lecturer D
23/05/05 - interview - Student B
23/05/05 - interview - Student F
27/05/05 - interview - Lecturer H
31/05/05 - interview - Support D
08/06/05 - interview - Support C

08/06/05 - interview - Lecturer C
09/06/05 - focus group - staff involved on the course
21/06/05 - interview - Lecturer J
14/07/05 - interview - Student J

10.5 Appendix: Online Discussion Guidelines

Information Systems Institute

Ashworth Building

University of Salford

Salford M5 4WT

"Shaping the Information Society"

Online Discussion Guidelines

Introduction

Student and staff behaviour is governed by a range of policies and codes at the University of Salford, as well as the normal social conventions that help us communicate, usually without

too many problems. Online discussion is increasingly a feature of modules in the ISI, as it can offer academic and social advantages.

The purpose of this short guide is to help staff develop and use online discussion guidelines that will minimise the particular problems that can occur in online discussion. The reduction of social cues, such as gesture, facial expression and body language, can exacerbate student frustration (Hara and Kling 1999, and lead to problems such as flaming where a participant, possibly less inhibited than in a face-to-face situation, publicly vents very negative feelings against an individual. It is entirely possible that such guidelines will become redundant in the future as we all learn to communicate via computers, and ubiquitous technologies allow greater expressiveness.

Moderators can use this guide, with the template provided at Appendix A, to develop their own guidelines (possibly in consultation with the students), or use one of the complete templates provided at Appendix B.

Which Guidelines to Choose?

Guidelines used should be based on the template at Appendix A. This template has been designed to complement and reinforce existing policies, codes and procedures. Any guidelines offered to students in the ISI should be published within this template to avoid any sense of conflict between the two sets of guidelines, or between the guidelines and University policies.

Research into virtual communities suggests that the involvement of community members in the development of norms, such as guidelines, can help build a sense of belonging. However recognising that tutors are busy, and semesters are short, we also offer some ready-made guidelines. Here are some suggested options, from which you may choose:

Option 1 – Minimalist

Use the template (Appendix A) as a minimal set of guidelines, allowing norms to develop informally within the group, over time.

Option 2 – Student Participation

Use the template, supplemented by additional guidelines develop with student discussion / consultation, included in Additional Guidelines Section of the template.

Option 3 – Reuse existing Guidelines

Use the template, supplemented by your preferred set of guidelines, included in Additional Guidelines Section of the template.

Option 4 – Off the Shelf

Use one of the sets of guidelines from Appendix B.

Note: If the discussion is explicitly part of an assigned learning activity, particularly if that discussion is assessed, tutors may need to provide additional guidance to students, e.g. on frequency, length and content of postings. Knowing that they are being assessed can increase student anxiety about "doing the right thing".

Making the Guidelines "Work"

We can create and publish a set of guidelines but there is no guarantee that students will take notice of them. The template will be introduced to students in Induction, and included in ISI student handbooks. The tutor can also introduce the guidelines when students start the module, and link to them in the introductory post or forum.

Using Kim's "Create, Enforce, Evolve" cycle, the moderator can act on postings that transgress the guidelines, according to the seriousness of the transgression (Kim 2000). For example, harassment or bullying would demand immediate action[2] , possibly invoking University Procedures, whereas a slightly inappropriate use of language by a student might be

[2] In Blackboard, there are facilities to exclude individuals from a discussion forum.

dealt with by a private email to the student, encouraging them to make amends in some way. Students can, of course, invoke the Student Complaint Procedure. Less serious departures from guidelines e.g. stylistic or message length may be dealt with by a general reminder of the appropriate guideline.

The Evolve stage of the cycle can result in the tutor's adaptation of their own guidelines, or in your feedback on this guide.

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Appendix A - Template

Online Discussion Guidelines

We provide these guidelines to promote enjoyable online discussions that encourage learning within a community based on mutual respect. The Information Systems Institute has set out general expectations for staff and students in its Statement of Expectations at https://intranet.isi.salford.ac.uk/open-docs/expectations.htm.

Online discussions enable communication independent of time and place, support from peers and tutor as well as the construction and sharing of knowledge but participants may need to think more carefully about how they express themselves, particularly where the communication is text-based.. In the absence of additional cues - body language, facial expression and vocal intonation - misunderstanding and

offence can occur more easily. You may have experienced these problems with email.

This resource is offered by the University of Salford, and those using it should comply with its policies, see http://www.salford.ac.uk/policies_procedures/ , such as the Policies on Equality and Diversity, on Harassment and Bullying, and on Dignity at Study and Work, and the Student Code of Conduct.

Anyone who posts to this discussion board takes full responsibility for the content of their message. The moderator reserves the right to remove postings or ban participants that may, in their judgment, break the general rules below but hope that this does not become necessary. Newcomers to online discussion boards should consult technical guidance on how to read and post messages in threaded discussions, e.g. the ISD Student Guide in Blackboard. Anyone complying with the following General Rules is unlikely to run into problems (Johnson 1997).

1. Know the rules of the forums in which you communicate and follow them.

2. Respect the privacy and property rights of others. When in doubt, assume the user wants privacy and ownership.

3. Respect the individuals with whom you communicate and those who are affected by your communication; that is, do not deceive, defame, or harass.

The University policy on Dignity at Study and Work specifically sets out the following (non-physical) behaviours as ones which any reasonable person would regard as bullying or harassment

derogatory comments, including remarks designed to undermine the dignity and self-esteem of the individual

verbal abuse intended to humiliate or intimidate

unwanted and unwarranted references to personal characteristics such as age, gender, racial or ethnic origin, religion, disability, sexual orientation

persistent and unjustifiable criticism

circulation of offensive images or literature

persistent and inappropriate behaviour, which causes unease or discomfort to the recipient

Additional Guidelines

The guidelines provided by the moderator here supplement, but cannot supersede, the rules and policies above.

If problems occur:

Any student who experiences a problem in online discussion should report it to the discussion moderator, in the first instance. Problems that remain unresolved should be reported to the programme director.

Students also have resort to the Student Complaint procedure, http://www.salford.ac.uk/policies_procedures/display.php?id=262 .

We also welcome feedback on these guidelines, through your student representative or directly to ??

Appendix B - Sample Guidelines

Sample 1 Online Discussion Guidelines

We provide these guidelines to promote enjoyable online discussions that encourage learning within a community based on mutual respect. The Information Systems Institute has set out general expectations for staff and students in its Statement of Expectations at https://intranet.isi.salford.ac.uk/open-docs/expectations.htm.

Online discussions enable communication independent of time and place, support from peers and tutor as well as the construction and sharing of knowledge but participants may need to think more carefully about how they express themselves, particularly where the communication is text-based.. In the absence of additional cues - body language, facial expression and vocal intonation - misunderstanding and offence can occur more easily. You may have experienced these problems with email.

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unwanted and unwarranted references to personal characteristics such as age, gender, racial or ethnic origin, religion, disability, sexual orientation

persistent and unjustifiable criticism

circulation of offensive images or literature

persistent and inappropriate behaviour, which causes unease or discomfort to the recipient

Additional Guidelines (Provided by Grahame Cooper)

The guidelines provided by the moderator here supplement, but cannot supersede, the

rules and policies above

Hello and welcome to the module.

This news/discussion group is provided to aid communication and provide mutual support on the module. If you have any questions to ask outside of the lectures, please could you start by asking them on this newsgroup. I will try to answer questions as quickly as possible. The fact that the answer is visible on this newsgroup means that everyone can benefit from the answer, and I will not need to answer the same question many times over.

You may also answer other people's questions yourself and thereby test and improve your own knowledge and understanding. Remember, if everyone contributes, then everyone will gain, and trying to explain things to others usually helps you to understand things better yourself.

I have in the past found that some people have not posted anything until very late in the module, and then loads of requests come through as we approach the exam. Unfortunately, I will not be able to cope with the volume if that happens, so it is best to keep on top of it throughout the semester.

Some points of protocol or "netiquette":

1. It is important to use meaningful titles for your questions.

2. Note that any new questions should be posted as new messages with a new title, NOT as replies to an existing message.

3. If you are replying to an existing message, then please do it as a reply to that message, NOT as a new topic.

4. Messages posted, must be concerned with the topic of the module.

5. It is important to observe normal levels of courtesy when communicating through this medium. Any abusive messages may result in disciplinary action being taken through the University's procedures. Very serious cases could even result in legal action. (See the regulations on use of the University's IT facilities.)

6. When you are asking questions, please write clearly, and make the question as specific as possible. It is difficult to answer totally open questions.

If you wish to try it out to test that it is working for you, then please post a reply to this message (using the reply option in your newsreader).

Cheers

<lecturer-name>

If problems occur:

Any student who experiences a problem in online discussion should report it to the discussion moderator, in the first instance. Problems that remain unresolved should be reported to the programme director.

Students also have resort to the Student Complaint procedure, http://www.salford.ac.uk/policies_procedures/display.php?id=262 .

We also welcome feedback on these guidelines, through your student representative or directly to p.r.spedding@salford.ac.uk

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We provide these guidelines to promote enjoyable online discussions that encourage learning within a community based on mutual respect. The Information Systems Institute has set out general expectations for staff and students in its Statement of Expectations at https://intranet.isi.salford.ac.uk/open-docs/expectations.htm.

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1. Know the rules of the forums in which you communicate and follow them.

2. Respect the privacy and property rights of others. When in doubt, assume the user

wants privacy and ownership.

3. Respect the individuals with whom you communicate and those who are affected by your communication; that is, do not deceive, defame, or harass.

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unwanted and unwarranted references to personal characteristics such as age, gender, racial or ethnic origin, religion, disability, sexual orientation

persistent and unjustifiable criticism

circulation of offensive images or literature

persistent and inappropriate behaviour, which causes unease or discomfort to the recipient

Additional Guidelines (Provided by Alex Heinze, Helen Ferris)

The guidelines provided by the moderator here supplement, but cannot supersede, the rules and policies above.

Please note that these are general guidelines and not rules. It is possible that some lecturers will ask you to follow their own forum specific instructions. You are also

encouraged to create your groups' own guidelines and feel free to use these as a starting point.

1.. Try to be concise. Try to use maximum of 350 words for your message (use word processor to count words if not sure). You might consider adding attachments if you have an essay to share with others - but bear in mind that this may not necessarily be read.

2.. Avoid TLA's - Three Letter Acronyms. If you must use them it is important that you explain them clearly.

3.. Try to use headings and even sub-headings to break up text into smaller paragraphs. You should treat each message as if you were creating a report - the contents should be presented in a logically organised way.

4.. KISS - Keep It Simple Stupid. Bear in mind the breadth of experience of your fellow students and try to cater for this disparity. Try, as far as possible, to not use technical jargon and don't take for granted your fellow readers' knowledge. Try to avoid big words. If it is difficult to explain something in words consider drawing a diagram in a document and attach it to your message. Use examples. Encourage feedback from others - ask questions.

5.. If possible, use a word processor to write your message. This will enable you to use the spell and grammar check functions before copying and pasting to Blackboard. Please also read your message before posting it - does it make sense? Make use of the preview option before you submit the message to check if is what you wanted to post.

6.. Don't just post "I agree" - say why.

7.. In order to keep the structure of the discussion, try and reply to an appropriate thread. If your message is not related to a specific thread consider starting a new one.

8.. If you have a relevant link, it is a good idea to share it with others rather than

copying pages of text. When posting a web page link, post the full address starting with "http://" so that it is recognised as a link.

9.. Make use of greeting and signature.

10.. Please read the background material (assignment specification/brief and/or other messages) before making your contribution to avoid repetition. Think carefully –

1.. Are you in the right forum?

2.. Are you in the right thread? It might be better starting a new thread rather then replying to existing messages.

11.. Think of using external references to strengthen your argument. There is information on referencing within the discussion forum on referencing.

12.. When responding within a forum remember that it is a public place, so make your reply to the forum, and not to individuals.

13.. Never be rude or dismissive - if you find a message inappropriate please let the teaching assistants know so that they can either modify or remove the message.

14.. Avoid the use of expletives, even mild ones. The forum is a public place, so respect for others who have access is very important.

If problems occur:

Any student who experiences a problem in online discussion should report it to the discussion moderator, in the first instance. Problems that remain unresolved should be reported to the programme director.

Students also have resort to the Student Complaint procedure, http://www.salford.ac.uk/policies_procedures/display.php?id=262 .We also welcome feedback on these guidelines, through your student representative or directly to p.r.spedding@salford.ac.uk

Sample 3

Online Discussion Guidelines

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2. Respect the privacy and property rights of others. When in doubt, assume the user wants privacy and ownership.

3. Respect the individuals with whom you communicate and those who are affected by your communication; that is, do not deceive, defame, or harass.

The University policy on Dignity at Study and Work specifically sets out the following (non-physical) behaviours as ones which any reasonable person would regard as bullying or harassment

derogatory comments, including remarks designed to undermine the dignity and self-esteem of the individual

verbal abuse intended to humiliate or intimidate

unwanted and unwarranted references to personal characteristics such as age, gender, racial or ethnic origin, religion, disability, sexual orientation

persistent and unjustifiable criticism

circulation of offensive images or literature

persistent and inappropriate behaviour, which causes unease or discomfort to the recipient

Additional Guidelines (Provided by Frances Bell)

The guidelines provided by the moderator here supplement, but cannot supersede, the rules and policies above

DO

Do reply carefully and treat other community members with respect. Think of the board as a large group conversation.

Do post messages on topics that are likely to interest members of this community. Remember that this community is for students (and staff) on this module.

Do focus on issues, and use information to develop arguments.

Do omit the previous thread when you reply, or limit what you include. A sentence or two is usually enough. Make your posts 90% to 100% original text.

Do restrict your post to what can be seen on one screen (or include longer postings as an attachment).

Do use a descriptive subject line in new posts. We have no rules about subject lines, just that they make sense.

Do use emoticons where there is a risk that you may be misunderstood. Irony is particularly tricky in online discussions. Here is a link to a dictionary of emoticons if you want to progress beyond ;-) and (()).

Do use jokes sparingly and carefully.

Do respond privately by email , if your response is personal, private or may embarrass readers.

Do "count to ten" before you take offence at another's posting. Sometimes it's useful to wait and see how another participant reacts to a situation before you respond.

Do report abuse, spam, etc., immediately, identifying the thread. Verified offenders are banned from the discussion board without warning.

DON'T:

Don't focus on people, particularly by flames or insults.

Don't post promotions for any product or service.

Don't post adult content, virus alerts, chain letters, appeals for donations to special causes

Don't engage in any of the harassing behaviours listed in the previous section.

Don't do anything here that you wouldn't want to have to explain to your programme director or your family. In any case, the former may drop by from time to time.

Don't re-post another contributor's ideas elsewhere without permission. You wouldn't like it if someone took your ideas, and in any case, you'll easily be found out.

N.B. These conferencing guidelines were prepared with reference to the University of Michigan Conferencing Etiquette Policy and to freelance-seattle.net's Guidelines

If problems occur:

Any student who experiences a problem in online discussion should report it to the discussion moderator, in the first instance. Problems that remain unresolved should be reported to the programme director.

Students also have resort to the Student Complaint procedure, http://www.salford.ac.uk/policies_procedures/display.php?id=262 .

We also welcome feedback on these guidelines, through your student representative or directly to p.r.spedding@salford.ac.uk

10.6 Appendix: Blackboard (BB) Features

Authors: Aleksej Heinze and Helen Ferris

Date: 12 September 2004.

Assignment Manager

A comprehensive tool to set up and manage assignments, this includes a facility for electronic document submission, and automatic multiple-choice question marking. It can also be integrated with Question Mark Perception (a comprehensive tool for multiple choice questions http://www.questionmark.com/uk/perception/index.htm). This particular feature is not very intuitive but once you set up the basics it works fine. Grade book and Test manager are integral parts of assignment manager.

Assignments

"Assignments" is a designated area for download and upload of assignments by the students. This is an integral part of the assignment manager (see above).

Digital Drop box

Feature for uploading electronic files by students; it is a good back up facility for assignment submission. Students don't realise that Digital Drop box in one module is not connected to a digital drop box in another and sometimes use just any digital drop box.

Discussion boards

Asynchronous communication facility enables the setting up of discussion topics structured by threads. Discussion boards enable 'many to many' student and staff communication. Benefits include economies of scale i.e. replying to one message where all students can

benefit from the answer. It also flags up new messages and some statistics on how many times a message was read. There are some difficulties with misuse such as messages posted in the incorrect thread, lack of messages from some students etc. It is recommended to use discussion boards guidelines.

Virtual classroom

'Chat room' for students and staff providing instant communication on a many to many basis; management of such "conferences" is more difficult than the asynchronous discussion boards, however in smaller groups i.e. 5 users at a time it can be potentially productive because replies can be instantly received. Students, on a group assignment, have successfully used this tool.

Group area

Group work is ideal with the group area facility of Blackboard. This enables a "private" corner for student communication. Tools within groups include private discussion board, private virtual classroom and a file sharing facility where students can upload files into a designated space. Although private from other students this area is accessible by Instructors and Teaching Assistants. There is also a group email function where one email can be sent to all group members. As with all BB e-mail each recipient is unable to see who else the message was sent to.

Course Documents

Files such as presentations and any other handouts are stored here for student access. It was agreed on the part-time modules to use a folder structure within the "Module Documents" section, where each topic of the module is divided into so-called units.

Staff information

A picture board and lecturers and support staff contact information.

Announcements

Option to post messages to a particular module, all students who log in can usually see all recent announcements on the index page. A drawback of announcements is that there are some bugs which don't filter the date order correctly and if modified the announcements disappear from the index page. There are tools such as the scheduled release of announcements allowing some announcements being automatically enabled and disabled.

Email in Blackboard

Blackboard offers the option of sending emails through its own mail send system. If an email is sent to multiple users, the recipients can't see who else has received that email, whilst of advantage in certain cases, it has the drawback of students sending an email to all staff resulting in all staff dealing with the same issue and not knowing who else has replied to that email.

A proposed default set-up for the Blackboard part-time modules is as follows:

Announcements,

Staff Information,

Course Material,

Assignments,

Discussion Boards,

Group Pages

Student Tools

Last year it was agreed with the GTA's that the discussion boards would be checked at least once every 48 hours.

Student Induction Guidelines

These guidelines are designed to help students on the BSc I.T. (part-time) degree become familiar with Blackboard, and provide some pointers to the studying process.

Blackboard or Virtual Learning Environment (VLE) is a website which you can access from any computer connected to the Internet. The address for this website is:

http://vle.salford.ac.uk

Initial exploration of VLE: It is recommended that students set aside a couple of hours to conduct a thorough exploration of the VLE, and all the functions that it provides.

You might be enrolled on several modules at once, so familiarise yourself with both modules as the structure of the sites might be different.

The options are on the left hand side of the index page (Announcements, Calendar, Tasks, View Grades, Send E-mail, User Directory, Address Book, Personal Information) Please note: some modules might be set up differently.

Exploring the functions provided for each course such as:

- Announcements,
- Staff Information,
- Course Material,
- Assignments,

- Discussion Boards,

- Group Pages

- Student Tools

These are important facilities that you will use for the duration of the course. Note that these are only default sections and some members of staff might be using some alternative naming.

Students are expected to allocate a reasonable amount of time per week for studying at home/online (plus four hours per week attending). This may vary according to individual experience and ability. This would typically include reading material provided by lecturers, background reading, contributing to discussion forums, and work on assignments.

Students should check the VLE a minimum of three times per week. This should involve:

Checking for new announcements (these will appear on the index page, as well as in the "Announcements" option)

Checking the calendar, particularly for new and due assignments – this will be created at the beginning of the semester, but is subject to change, e.g. if a session is rescheduled. Students should always be aware of fixtures in the calendar.

Checking the discussion forums – reading new contributions, and/or making a contribution.

Students should check their e-mails each working day.

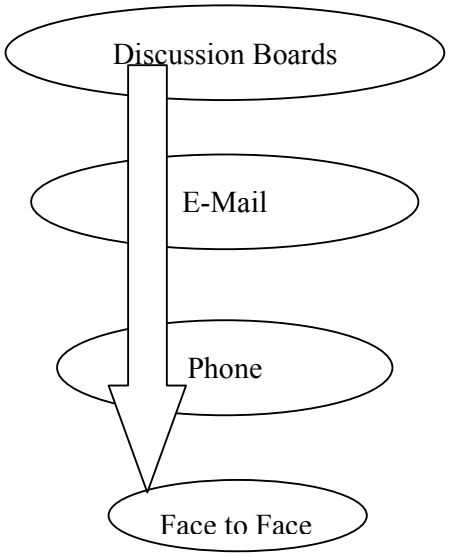
Discussion Boards are the most efficient form of communication on the course. Because Blackboard is the central point of communication you should consider using the discussion boards to communicate – the advantages are:

You are more likely to get a reply from someone on the course either a student or a member of staff – members of staff are not always able to answer your questions – your fellow students might – because they are going through the same experience.

All discussions on Blackboard are in a documented format – you can always refer to these later in the module unlike a face-to-face encounter where some points can be missed

Other students might have the same difficulty but not have reached the point of experiencing it yet – so there is some knowledge that is shared.

However there are some limitations with discussion boards. These can be issues such as not wanting to share your difficulty with everybody for any reason or that it is an emotional issue i.e. a personal problem. Therefore the students and staff are encouraged to consider using the discussion board first and then move down the communication channels hierarchy dependent



on how sensitive the issue is and what are the chances of misinterpretation.

However, if the member of staff, who you approached in your communication, recognises an issue, which would be of benefit to the whole class – the answer can be communicated to others via discussion board.

When you have a query about anything related to the course, firstly check the FAQ discussion forum for any related discussions. If there are none then you should post your questions there. If you feel the issue is of a more personal nature you may contact the teaching assistants – by

e-mail, phone, or in person – for help with the matter. If you feel the issue is more serious, you may contact the lecturer or course tutor directly.

Be aware of the ISD Student Guide and Passkey courses – these may prove to be particularly helpful for new students.

Students must amend their e-mail address in the "Edit Personal Information" section of the "Personal Information" menu on the Index Page. Your default e-mail address entered into Blackboard is incorrect. This is vital, so that people can reach you via email.

You must use your University email account, staff can refuse emails from private email accounts as these can be filtered out through the University junk mail filters.

In case you have personal problems, resulting in study difficulties, please familiarise yourself with the Personal Mitigation Circumstances process: https://intranet.isi.salford.ac.uk/open-docs/pmc.htm for information. (Note: to access the ISI intranet pages you can use your usual Blackboard login name and password.)

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